



# **Critical and Emerging Issues on Food Security and Nutrition**

## **HLPE Inquiry**

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### ***Proceedings***

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## **Knowledge Organizations' Inputs**





**HLPE Inquiry**  
**Critical and Emerging Issues for Food Security and Nutrition**  
**Questionnaire**  
**(Please fill a separate form for each issue identified)**

**About the respondent**

Name, Surname and Institution	<b>ASARECA</b>		
Do you answer on behalf of your institution, or as an individual?	On behalf✓	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes✓	No	
Country of the responding individual/institution Please mention international or regional, the case being	Eastern and Central African (Sub-regional)		

**1. Overview of the issue**

Issue <i>in 2 lines</i>	<i>K1A Climate Smart Agriculture for enhanced resilience against climate change impacts on crop yields, agricultural water productivity and food security</i>		
Description of the issue <i>in less than 5 lines</i>	Global and regional food security levels are being threatened by climate variability and change. This presents significant challenges to policy makers as well as other actors that are involved in assuring food security for the future. There is credible evidence indicating that changes in climatic variables will have major influences on global as well as regional food production. To address this issue, strategies for enhancing resilience and adaptation of local cropping systems through Climate Smart Agriculture (CSA) should be pursued.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge✓	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Listing and ranking of priority development challenges affecting or likely to affect Food and Nutrition Security within the sub region.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	<ol style="list-style-type: none"> <li>1. Promotion of CSA/adaptation technologies and management practices within the ECA region</li> <li>2. Crop modeling and yield gap analysis to inform National Agricultural Investment Plans</li> <li>3. Promotion of gender responsive climate smart technologies and innovations</li> <li>4. Creation of enabling policy environments</li> </ol>
Main actor(s) concerned or involved in the response proposed	<p>Development workers Private sector Governments and regulatory authorities Farmers Researchers</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?	√		Briefly mention how this may be the case

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	√	√	√	√	
Nature of the main impact of the issue on FSN	√	√	√	√	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There is evidence that CSA can contribute positively towards mitigation of climate variability and change impacts both on crop yields, agricultural water productivity and ultimately food security. CSA is a social action as well since it addresses gender based constraints.

Crop modeling and yield gap analysis for future climate scenarios is extremely important in forming/guiding decision making by policy makers both at national and regional levels.

Agricultural sector needs to be re-oriented to match the changing realities posed by climate variability and change. Consequently, the legal frameworks at national and regional levels need to be reviewed and aligned to address the emerging challenges of climate variability and change and ensure food security for the future.

## 3. Attributes of the Issue

	<i>Classification (**)</i>	
1. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point	Systemic issue√

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2. Breadth: Are there many people affected?	Few		Many✓	
3. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
4. Impact on Availability	++			
5. Impact on Access	++			
6. Impact on Utilization/ nutrition	++			
7. Impact on Stability	+			
8. Impact on most vulnerable people	Specify as appropriate			
9. Impact on women	+			
10. Impact on children	+			
11. Impact on marginalized populations	Specify as appropriate			
12. Cost to address the issue	Low	Middle✓	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
CSA technologies have a potential to enhance adaptation of local cropping systems thereby mitigating changes in climatic variables (temperature/rainfall) that can cause significant crop yield losses. This in turn will have a high impact on food availability. Increased food availability, will in most cases ensure adequate access and nutrition. Positive impact on women, since they are the ones who are mainly involved in smallholder agriculture in the ECA sub region.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		✓	
Moment to act to address the issue	✓	✓	✓

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
Climate variability and change is an emerging issue that needs to be addressed immediately with piloting of potential CSA technologies. The timeframe for the action on the issue should be immediate. The action should be sustained for the next 10-20 years, if we are to reverse the negative impacts attributed to climate variability and change and be able to improve the food and nutrition security in the region.

#### 5. Degree of confidence

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Solidity of currently available knowledge base.

Low

Middle✓

High

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Fairly good knowledge base on CSA, climate variability and change impacts and food and nutrition security is available.

#### **6. Linkages with SDGs (1 to 17)<sup>1</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
1, 2, 3, 5, 8, 10, 13, 15, 16

#### **7. The case being, linkages with any other issue**

#### **8. Additional Supporting Information**

*Additional information*

<sup>1</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

### *Evidence*

### *Knowledge gaps*

Limited information on yields from CSA crops in sub Saharan Africa. Limited empirical evidence on linkage between CSA and nutrition/utilization.

Lack of information on how regulatory/legal frameworks have played a critical role in mitigating climate impacts under CSA conditions.

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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	ASARECA		
Do you answer on behalf of your institution, or as an individual?	On behalf✓	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes✓	No	
Country of the responding individual/institution Please mention international or regional, the case being	Eastern and Central African sub-region		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K1B Sustainable intensification of crop and livestock systems		
Description of the issue <i>in less than 5 lines</i>			
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge✓	Opportunity✓	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Multi-disciplinary information from research on conservation agriculture Analyses of value chains and constraints to technology adoption Farmer participation in marketing, testing of new crop varieties Analysis of economic merits of new production systems		
Main response proposed to address the issue	5. Development and/or adaptation of technologies and management practices 6. Validation of technologies and management practices 7. Building of social capital 8. Creation of enabling policy environments		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

Farmers  
Researchers  
Governments and regulatory authorities  
Private sector players

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		√	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	√	√	√	√	
Nature of the main impact of the issue on FSN	√	√	√	√	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Adoption of sustainable intensification practices have been shown to provide win-win outcomes by increasing yields and conserving of agricultural resources.

Sustainable agricultural intensification in knowledge intensive and needs strong and consistent extension services.

Social capital, public goods and private assets are critical preconditions for sustainable agricultural intensification.

## 3. Attributes of the Issue

	Classification (**)			
13. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue√	
14. Breadth: Are there many people affected?	Few		Many√	
15. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

16. Impact on Availability

++

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17. Impact on Access	++		
18. Impact on Utilization/ nutrition	+		
19. Impact on Stability	+		
20. Impact on most vulnerable people	Specify as appropriate		
21. Impact on women	+		
22. Impact on children	+		
23. Impact on marginalized populations	Specify as appropriate		
24. Cost to address the issue	Low	Middle✓	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		✓	
Moment to act to address the issue	✓	✓	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle✓	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>2</sup>

<sup>2</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
1, 2, 3, 5, 8, 10, 13, 15, 16

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

Evidence of improved nutrition from adoption of sustainable intensification practices  
How to strengthen and protect assets of poor households as a critical pathway to enhancing adoption of sustainable intensification practices

*References*

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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Shenggen Fan, Director General, IFPRI		
Do you answer on behalf of your institution, or as an individual?	<u>On behalf</u>	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	<u>Yes</u>	No	
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K2A Sustainable intensification with a focus on nutrition</i>		
Description of the issue <i>in less than 5 lines</i>	The global food system is increasingly vulnerable to several critical pressures, including natural resource constraints and climate change. Moreover, hunger and malnutrition persist worldwide. We need a food system that produces more nutrition with less inputs without further damage to the environment.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	<u>Opportunity</u>	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<p>Review of the available evidence, as well as outcome of a variety of global, regional, and national consultations including:</p> <ul style="list-style-type: none"> <li>• IFPRI 2013-2018 strategy development process</li> <li>• IFPRI policy seminars</li> <li>• Consultations with partners of IFPRI-led CGIAR research programs</li> <li>• Director General meetings with heads of state and key agency/organization leaders</li> <li>• Roundtable discussions held between IFPRI senior management and stakeholders and partners such as the World Bank, USAID, etc.</li> <li>• Compact2025 roundtable discussions</li> </ul>		

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Main response proposed to address the issue	<p>Sustainable intensification—producing more nutritious foods with more efficient use of inputs, resources, and less environmental damage—is an innovative solution that can help to feed the world healthily, sustainably, and build resilience into the system.</p> <p>Intensifying sustainable agriculture is a systems-approach to reshaping the global food system, which is increasingly complex and interconnected. Combining production- and productivity-oriented interventions with environmental considerations will require a multi-sectoral effort that can also lead to other benefits, achieving a food system that is productive and efficient, inclusive, environmentally sustainable and climate-smart, nutrition-and health-driven, and business-friendly.</p> <p>The main imperatives behind this approach include improving water-use efficiency, supporting sustainable land and forest management, and promoting sustainable consumption practices. In addition, triple-win technologies can also reduce the trade-offs among food security, nutrition, and environmental sustainability goals, and exploit synergies among them. Such technologies and practices include nitrogen-use efficiency, heat- and drought-tolerant crop varieties, precision agriculture, and drip irrigation. Investments in greenhouse gas mitigation include helping farmers improve their energy efficiency and manage their land in ways that increase carbon storage. The global mitigation potential of agriculture has an estimated worth between US\$32 billion and US\$420 billion (Bryan et al. 2008).</p> <p>Subsidy policies in agriculture must be reformed to promote more efficient use of water, fertilizer, energy, and reduction of GHG emissions, and support more nutritious food production.</p>
Main actor(s) concerned or involved in the response proposed	<p>Policymakers, practitioners, researchers, academics, private sector, and civil society.</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		X	Briefly mention how this may be the case

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

(*)	<i><b>Economic (and productive)</b></i>	<i><b>Social (and Cultural)</b></i>	<i><b>Environmental (resources, etc.)</b></i>	<i><b>Governance (institutions, rights, etc.)</b></i>	<i><b>Other (SPECIFY)</b></i>
Main nature of the issue			X		
Nature of the main impact of the issue on FSN	X		X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
25. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			<u>Systemic issue</u>
26. Breadth: Are there many people affected?	Few			<u>Many</u>
27. Scale: local/national/regional/global?	Local	National	Regional	<u>Global</u>
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

28. Impact on Availability	++
29. Impact on Access	++
30. Impact on Utilization/ nutrition	+
31. Impact on Stability	++
32. Impact on most vulnerable people	++= The poorest and most marginalized people are most vulnerable to environmental and other shocks.
33. Impact on women	+
34. Impact on children	++
35. Impact on marginalized populations	++
36. Cost to address the issue	Low Middle <u>High</u>

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	<u>High</u>
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The technologies needed to intensify agriculture in a sustainable manner are within our reach. More investment is needed to assess their impact on a large scale and beyond technological solutions, to probe the types of policies, funding, and political commitment that can create an enabling environment to re-design our global food system.

#### 6. Linkages with SDGs (1 to 17)<sup>3</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Adopting these innovations can help achieve SDG 2- End hunger, achieve food security and improved nutrition, and promote sustainable agriculture, SDG 1 – Eliminate extreme poverty, and SDG 12- Ensure sustainable consumption and production patterns. However, numerous other SDGs can derive benefit. These include goals related to clean water and sanitation (SDG 6), decent work and economic growth, especially for smallholders (SDG 8), climate action (SDG 13), and life on land (SDG 15).

<sup>3</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

## 7. The case being, linkages with any other issue

Sustainable agriculture affects multiple other sectors and issues, including economic growth, poverty, nutrition, women's empowerment, water and sanitation, and environmental health.

## 8. Additional Supporting Information

### *Additional information*

### *Evidence*

An IFPRI study projects that climate change will reduce global average yields for major crops - coarse grains, rice, wheat, oilseeds and sugar - by about four percent in 2050 relative to what they would be in the absence of climate change (Wiebe et al. 2015).

Examples of triple win technologies include:

- **Biofortification** improves yields and nutrition, as evidenced by the work of HarvestPlus. For example, zinc-fertilized maize has increased yields, replenished soil minerals, and provided nutrient-fortified foods in Zimbabwe (Manzeke et al. 2014). In India, iron-rich pearl millet was 1.6 times more likely to have resolved iron deficiency among school-aged children compared with those who ate ordinary pearl millet (Finkelstein et al. 2015). In Mozambique, biofortification reduced the prevalence of diarrhea in children under age 5 by 11.4 percent and the duration of diarrhea by 10 percent (Jones and de Brauw 2015). As part of an integrated agriculture and nutrition intervention there, orange sweet potato reduced the prevalence of vitamin A deficiency among children by 15 percent (Low et al. 2007).
- **Precision agriculture** has great potential. In the North China Plain, it has resulted in water-saving patterns without loss of wheat yields (Dan-dan 2014)
- **C4 Rice** is considered to be a "climate-ready" variety of rice: it is drought and heat resistant and thrives in hot, arid environments. Studies have shown that its use can likely increase rice yields (50%) and nitrogen-use efficiency (30%) (IRRI 2013)

### *Knowledge gaps*

- Expanding research and extension services to increase tolerance to stresses like heat waves, droughts, floods, salinity, pests, and diseases
- Testing new technologies that can save water and energy and enhance nutrition at scale
- Assessing options for facilitating a diversity of livelihoods and crop choices
- Conducting further research into payments for ecosystem services and access to carbon credits

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Shenggen Fan, Director General, IFPRI		
Do you answer on behalf of your institution, or as an individual?	<u>On behalf</u>	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	<u>Yes</u>	No	
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K2B Support small farmers to move up or move out</i>		
Description of the issue <i>in less than 5 lines</i>	Small farmers produce up to 80 percent of the food in Asia and Africa south of the Sahara, but they face many challenges and make up half of the world's hungriest people. We must support smallholders in moving up or moving out of agriculture, in order to help pull them out of poverty and achieve food and nutrition security.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	<u>Opportunity</u>	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<p>Review of the available evidence, as well as outcome of a variety of global, regional, and national consultations including:</p> <ul style="list-style-type: none"> <li>• IFPRI 2013-2018 strategy development process</li> <li>• IFPRI policy seminars</li> <li>• Consultations with partners of IFPRI led CGIAR research programs on Policy, Institutions and Markets (PIM) and Agriculture for Nutrition and Health (A4NH)</li> <li>• Director General meetings with heads of state and key agency/organization leaders</li> <li>• Roundtable discussions held between IFPRI senior management and stakeholders and partners such as the World Bank, USAID, etc.</li> <li>• Compact2025 roundtable discussions</li> </ul>		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	<p>Smallholder farmers face many challenges, including lack of access to affordable technology and services, vulnerability to changes in weather patterns and climate shocks, scarce up-to-date information about prices, farming conditions, and produce quality, and inadequate finance and credit services. These obstacles translate into widespread poverty, food insecurity, and poor health and nutrition for the world's food producers. Small farmers are not a homogenous group that should be supported at all costs, but rather a diverse set of households living in different types of economies. They can prosper either through a "move up" or move out" strategy. To move small farmers with profit potential toward greater prosperity while at the same time improving global food security and nutrition, a number of measures could be taken to address these challenges:</p> <ul style="list-style-type: none"> <li>• Supporting efficient transfer of land through the certification of land rights and through well-functioning and transparent land-rental and sales markets.</li> <li>• Promoting smallholder-friendly innovations, such as bundling financial and non-financial services, as well as extension services and risk management mechanisms</li> <li>• Investing in agricultural research and development</li> <li>• Scaling up productive, cross-sector social protection</li> <li>• Where appropriate, encouraging small farmers to move up in agriculture, consolidating farm size, engaging in high value production, and linking to efficient food value chains.</li> </ul> <p>Where farmers face insurmountable challenges to their agricultural livelihoods, they should be encouraged to move out of agriculture into nonfarm employment. Providing education, skills training, and access to health and unemployment benefits can help them find better jobs in urban centers and better adjust to this transition.</p>
Main actor(s) concerned or involved in the response proposed	Policymakers, practitioners, researchers, academics, and civil society.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
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Is the issue either or both?		X	Briefly mention how this may be the case
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(*)	<i><b>Economic (and productive)</b></i>	<i><b>Social (and Cultural)</b></i>	<i><b>Environmental (resources, etc.)</b></i>	<i><b>Governance (institutions, rights, etc.)</b></i>	<i><b>Other (SPECIFY)</b></i>
Main nature of the issue	X				
Nature of the main impact of the issue on FSN	X		X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 3. Attributes of the Issue

	Classification (**)			
37. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			<u>Systemic issue</u>
38. Breadth: Are there many people affected?	Few			<u>Many</u>
39. Scale: local/national/regional/global?	Local	National	Regional	<u>Global</u>
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
40. Impact on Availability	++			
41. Impact on Access	++			
42. Impact on Utilization/ nutrition	+			
43. Impact on Stability	+			
44. Impact on most vulnerable people	++			
45. Impact on women	++			
46. Impact on children	+			
47. Impact on marginalized populations	++			
48. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	<u>Middle</u>	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Much is already known about the state of poverty, food and nutrition insecurity among smallholder farmers. More research is needed to assess the best modalities for assisting them, for example the most cost-effective social protection or insurance tools, options for moving smallholders out of agriculture at different levels of economic development, how to build up their resilience in the face of increasing shocks, and the gendered impacts of various forms of assistance.

#### 6. Linkages with SDGs (1 to 17)<sup>4</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Adopting these innovations can help achieve SDG 2- End hunger, achieve food security and improved nutrition, and promote sustainable agriculture. However, numerous other SDGs can derive benefit. Helping smallholders scale up will contribute to poverty alleviation (SDG 1) and helping them exit agriculture necessitates generating employment (SDG 8), likely in urban and peri-urban areas. Other types of support, such as ensuring that small-scale women farmers have better access to and control over land can contribute to gender equality (SDG 5). Investments in climate-smart agriculture that are friendly to small farmers can help adapt to and mitigate climate change and thus promote climate action (SDG 13).

<sup>4</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## 7. The case being, linkages with any other issue

The livelihoods, food and nutrition security of smallholders, half of the world's poor, links with multiple sectors and issues, including economic growth, poverty, nutrition, women's empowerment, water and sanitation, and environmental health.

## 8. Additional Supporting Information

### *Additional information*

### *Evidence*

Worldwide about half a billion farms are smaller than 2 hectares, and these farms are getting smaller in many countries (Hazell et al. 2007)

Results from model simulations show that climate change-induced losses in agricultural productivity are largest in developing countries, with losses forecast to reach 10–20 percent throughout Africa, Southeast Asia, and South Asia, regions where smallholder populations are relatively large (Wheeler 2011).

Cross-sectoral social protection initiatives have shown promising results in supporting smallholders. For example, Ethiopia's Food Security Programme combines conditional and unconditional income transfers with products and services that promote agricultural productivity and microenterprise Development. The program has increased asset holdings and productivity-enhancing investments, and helped many farmers and herders in Ethiopia become more resilient to the 2011 drought in the Horn of Africa (Gilligan, Hoddinott, and Seyoum 2009).

### *Knowledge gaps*

- Identification of location-specific and smallholder-friendly technological innovations across the whole agricultural value chain.
- Clarification of the private sector's contribution to smallholder productivity and appropriate instruments and strategies for integrating public-private partnerships and foreign direct investment (FDI) into local economies
- Design of innovative, simple, and flexible insurance tools (such as group-based risk sharing and credit) that are adapted to the varying needs and constraints facing smallholders, especially targeting subsistence farmers with profit potential
- How to integrate the agricultural, nutrition, and health sectors in ways that have the most benefits for smallholders and on how to scale up successful innovations and initiatives.

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Shenggen Fan, Director General, IFPRI		
Do you answer on behalf of your institution, or as an individual?	<u>On behalf</u>	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	<u>Yes</u>	No	
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K2C Increase food and nutrition security research and policymaking capacities</i>		
Description of the issue <i>in less than 5 lines</i>	Investment in agricultural research and development is associated with remarkably high returns. Since 2000, national investments in R&D have increased, but the trend has been driven by a handful of countries. The developing world needs to invest funding and human resources to fully exploit the potential of food and nutrition security-related R&D.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	<u>Opportunity</u>	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<p>Review of the available evidence, as well as outcome of a variety of global, regional, and national consultations including:</p> <ul style="list-style-type: none"> <li>• IFPRI 2013-2018 strategy development process</li> <li>• IFPRI policy seminars</li> <li>• Director General meetings with heads of state and key agency/organization leaders</li> <li>• Roundtable discussions held between IFPRI senior management and stakeholders and partners such as the World Bank, USAID, etc.</li> <li>• Compact2025 roundtable discussions</li> </ul>		

<p>Main response proposed to address the issue</p>	<p>Since the turn of the millennium, global investment in agricultural R&amp;D has greatly increased in the developing world. In Africa, for example, 23 countries have increased their investments, with this trend being led by such countries as Nigeria and Uganda. However, investment levels are still below the recommended 1-percent target in many countries, which face unstable research funding and a lack of well-trained research staff (Beintema and Stads 2014). More investment is needed in building up developing countries' capacity for research as well as their policymaking capacities—to collect credible data, conduct sound analysis, and design and implement evidence-based policies that support the SDGs.</p> <p>Two initiatives in particular are needed:</p> <ul style="list-style-type: none"> <li>• <b>Mobilizing data revolution.</b> Improving data, monitoring, and tracking of progress in not only agriculture but food and nutrition security more generally is key to ensure accountability. Actions that improve the collection and timeliness of data, such as high-frequency, long-term sentinel sites, can go a long way toward strengthening national- and regional-level data. Sharing this data widely is also key, such as through annual reports that track progress (IFPRI's Global Nutrition Report and Global Hunger Index are just two examples). Innovations in information communications technology can make data more accessible to ignored groups all along the food value chain. China's recently launched e-commerce platform, for example, provides rural farmers with information on agricultural produce and materials, and consumer products. To build research and policymaking capacities in Africa, ReSAKSS and AGRODEP, facilitated by IFPRI, promote increased access to data, tools, and analysis needed for evidence-based decision-making.</li> <li>• <b>North-South and South-South knowledge sharing.</b> Multi-disciplinary, multi-stakeholder research can garner lessons across developing countries and regions. IFPRI's Compact2025 initiative, for example, supports national and regional commitments with data, evidence, accountability mechanisms, helping countries implement evidence-based policy pathways to accelerate progress in ending hunger and undernutrition by 2025. IFPRI's Country Strategy Support Programs also build up national capacity in countries around the world through collaborative</li> </ul>
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	research with national partners, training of researchers and policymakers, and knowledge sharing through policy dialogues and events.
Main actor(s) concerned or involved in the response proposed	Policymakers, practitioners, researchers, academics, and civil society.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		X	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X		X	X	
Nature of the main impact of the issue on FSN	X		X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
49. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			<u>Systemic issue</u>
50. Breadth: Are there many people affected?	Few			<u>Many</u>
51. Scale: local/national/regional/global?	Local	National	Regional	<u>Global</u>
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — —, —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

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52. Impact on Availability	++		
53. Impact on Access	++		
54. Impact on Utilization/ nutrition	++		
55. Impact on Stability	++		
56. Impact on most vulnerable people	++		
57. Impact on women	++		
58. Impact on children	++		
59. Impact on marginalized populations	++		
60. Cost to address the issue	Low	<u>Middle</u>	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	<u>Middle</u>	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>5</sup>

<sup>5</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

Investing in boosting research and policymaking capacity can most directly achieve SDG 2- End hunger, achieve food security and improved nutrition, and promote sustainable agriculture. However, such investments are inextricably linked to numerous other SDGs. Research on smallholders, many of whom are disproportionately affected by climate change, impacts SDG 13. Protecting biodiversity by cutting post-harvest losses, for example, contributes to six of the SDGs and sustainable water management contributes to SDG 6. These are just a few examples of the many cross-cutting issues that R&D has the potential to address.

## **7. The case being, linkages with any other issue**

Research and development affects multiple other sectors and issues, including economic growth, poverty, nutrition, women's empowerment, water and sanitation, education, resilience work, and the environment.

## **8. Additional Supporting Information**

### *Additional information*

### *Evidence*

A solid evidence base shows that investments in agricultural R&D during the past few decades have greatly increased global agricultural productivity, leading in turn to higher incomes, lower poverty levels, greater food security, and better nutrition (Evenson and Gollin 2003; World Bank 2007; IAASTD 2008).

A recent IFPRI study shows investing in agricultural R&D with the aim of increasing agricultural total factor productivity by 2 percent can lower world prices of cereals and meat by as much as 17 and 15 percent, respectively, as well as increase crop yields by 8.5 percent by 2030. Under this same scenario, the number of malnourished children can be reduced by 7 million (5.4 percent), and hungry people by 160 million (23.2 percent) (Perez and Rosegrant 2015).

### *Knowledge gaps*

- Indirect effects of agricultural changes on economic growth, income and health services
- Impact of agricultural policy on nutrition
- Role of private-sector research and innovation in developing regions
- Tangible ways in which policy and institutional processes improve agriculture, food and nutrition security
- In-depth analysis of institutional-level innovations in R&D at the national, regional, and global levels

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Shenggen Fan, Director General, IFPRI		
Do you answer on behalf of your institution, or as an individual?	<u>On behalf</u>	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	<u>Yes</u>	No	
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K2D Close gender gap for a more inclusive and effective food system</i>		
Description of the issue <i>in less than 5 lines</i>	Women are key contributors to the global food system, but face significant economic and social obstacles as agricultural producers, wage earners, and entrepreneurs, hindering their ability to achieve food and nutrition security for themselves and their households. Closing the gender gap would make great strides in ending hunger and malnutrition on a global scale.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	<u>Opportunity</u>	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<ul style="list-style-type: none"> <li>Review of the available evidence (including key publications such as the SOFA 2011, Quisumbing et al. (2014), a collection of background papers for the SOFA 2010-2011, the World Bank's World Development Report 2012) and ongoing research at IFPRI on gender and food security.</li> </ul>		
Main response proposed to address the issue	Globally, women, are key producers of food and contributors to the global agricultural and food system. The inverse is also true: agriculture is critical to women's livelihoods. Despite this reality, women face social and economic exclusion and may have less access to and control over resources, such as land, assets, information, capital, and even food, than men. Women also work longer hours than men, counting both productive and reproductive tasks, and resources controlled by women are more likely to be invested in child schooling, health, and nutrition.		

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	<p>Closing the gender gap in women's use, control, and ownership of resources, and empowering them within the agricultural sector and food systems more broadly are key to making agriculture and food systems more inclusive and effective in achieving food and nutrition security. Studies have shown that if women had equal access to resources, thereby closing the gender gap in agricultural yields, the result would be 150 million fewer hungry people (FAO 2011). Governance reform in the area of resource rights is also critical: in Ghana, women with more secure land rights were more likely to plant trees (Quisumbing et al. 2001); in Ethiopia, strengthening women's land rights through community land registration increased investment in sustainable land management technologies (Quisumbing and Kumar 2014), and in Vietnam, female-only held land-use rights improved child health, increased their health insurance coverage, raised school enrollment, and reallocated household expenditures toward food and away from alcohol and tobacco (Menon et al. 2014).</p> <p>Building the evidence base on gender gaps and what works to close them is key. IFPRI's work over the years has made great strides to improve the quality of data on gender, such as through the Women's Empowerment in Agriculture (WEAI) (see <i>Evidence</i> section below) and the development of sex-disaggregated databases in Bangladesh and Ethiopia. Investment in gender-relevant research can lead to the design of policies, programs, and other interventions that can better serve women and thus improve our food system. Working with agricultural development projects through the Gender, Agriculture, and Assets Project (GAAP), researchers generated evidence on how the gender asset gap can affect participation in agricultural development projects, and how the projects in turn can affect the gender asset gap (Johnson et al. 2016). Working with a larger portfolio of agricultural development projects, Phase 2 of GAAP will develop a project-level measure of women's empowerment in order to assess which project strategies work best to empower women,</p>
Main actor(s) concerned or involved in the response proposed	Policymakers, practitioners, researchers, academics, and civil society, including women's organizations.

*For the public inquiry fields below are optional*

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## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		X	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X		X	
Nature of the main impact of the issue on FSN	X	X		X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
61. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			<u>Systemic issue</u>
62. Breadth: Are there many people affected?	Few			<u>Many</u>
63. Scale: local/national/regional/global?	Local	National	Regional	<u>Global</u>
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
64. Impact on Availability	+			
65. Impact on Access	++			
66. Impact on Utilization/ nutrition	++			
67. Impact on Stability	+			
68. Impact on most vulnerable people	++			
69. Impact on women	++			
70. Impact on children	++			
71. Impact on marginalized populations	++			
72. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There is growing momentum to address gender issues that should be capitalized on now, but it also cannot be seen as a short-term investment; sustained attention is needed to build women's control over assets.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	<u>Middle</u>	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

We know a great deal about the importance of the gender gap in assets, but gender analyses must be tailored to local conditions, and we need more information about what works to overcome critical gender gaps.

#### 6. Linkages with SDGs (1 to 17)<sup>6</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Adopting these innovations can help achieve SDG 5- Achieve gender equality and empower all women and girls and SDG 2- End hunger, achieve food security and improved nutrition, and promote sustainable agriculture. However, numerous other SDGs can also derive benefit. These include goals related to poverty (SDG 1), decent work and economic growth, especially for smallholders (SDG 8), and reduced inequality (SDG 10).

<sup>6</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



## 7. The case being, linkages with any other issue

Gender affects all sectors and issues, including economic growth, poverty, nutrition, health, and education.

## 8. Additional Supporting Information

### *Additional information*

The Gender, Agriculture and Assets Project (GAAP) toolkit contains materials to help researchers and practitioners use mixed methods to collect and analyze gender and assets data, and Bryan et al. (2014) provide a research guide for gender-disaggregated analysis of climate change impacts and adaptation.

### *Evidence*

- Women's decisionmaking power in agriculture is critical. For example, in a study of the adoption of biofortified oranges sweet potato in Uganda, adoption was higher on plots that were jointly owned, but where the woman was the primary decisionmaker on what to grow (Gilligan et al. 2013).
- Development interventions--such as cash transfers, agricultural programs, and microfinance--have gendered impacts. For example, Brazil's Bolsa Familia conditional cash transfer has significant impacts on women's decision making – and considerable differences in effects between rural and urban households and different domains of decision-making (de Brauw et al 2014).
- The Women's Empowerment in Agriculture (WEAI) is the first comprehensive and standardized survey-based index to measure the empowerment, agency, and inclusion of women in the agricultural sector (Alkire et al. 2013). An analysis of WEAI scores from thirteen USAID Feed the Future countries finds that the greatest obstacles to women's empowerment are lack of access to credit, heavy workloads, and low levels of group membership. Women's empowerment scores are also strongly associated with household educational achievement, income, and maternal behavior (Malapit et al 2014). The overall WEAI score, the number of groups in which women actively participate, women's control of assets, and a narrowing gap in empowerment between men and women within households are positively associated with calorie availability and dietary diversity (Sraboni et al. 2014).
- Women's empowerment mitigates the negative effect of low production diversity on maternal and child dietary diversity and height-for-age z-scores, suggesting that it has greater potential to improve nutrition outcomes in households with monoculture production (Malapit et al. 2015).

### *Knowledge gaps*

- A need for better sex-disaggregated data, especially at the national level.
- A need for more sex-disaggregated data related to economic empowerment, knowledge of legal rights and recourse, participation in decision making, attitudes and social norms, and adolescents and youth (both girls and boys)
- Despite wide use of women's decision making indicators, most of these have been confined to the domestic sphere and little has been done to explore exactly what domains of decisionmaking these capture. Recently-developed indicators like the WEAI need to be expanded to include labor markets, nonfarm employment, and other nodes of the value chain.
- Lack of rigorous evidence, based on sound impact assessment studies, on what strategies work best to empower women in various contexts

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Khaled Abbas INRA Algeria	
Do you answer on behalf of your institution, or as an individual?		As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	Algeria	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K3A <i>L'eau, la démographie, les changements climatiques et la dépendance économique : facteurs déterminants de la sécurité alimentaire. La gestion durable des ressources naturelles: carrefour des politiques futures.</i>		
Description of the issue <i>in less than 5 lines</i>	<p><b>L'exiguïté des terres agricoles</b> et la <b>forte croissance démographique</b> ont freiné l'impact des politiques agricoles en Algérie. Un recours de plus en plus important aux importations a permis de rendre de plus en plus disponibles les aliments de base, de réduire la malnutrition et à satisfaire les besoins alimentaires énergétiques de la quasi-totalité des différentes couches de la population. Le développement de l'agriculture basé sur des programmes d'intensification n'arrive pas à produire une augmentation significative des rendements au vu <b>de l'indisponibilité des ressources hydriques</b>. La sécurité alimentaire en Algérie peut être caractérisée par sa fragilité au vu de la dépendance des importations eux-mêmes liées au marché des hydrocarbures de plus en plus incertain.</p>		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<ul style="list-style-type: none"> <li>- Series temporelles des disponibilités alimentaires (céréales, viands, lait) (FAOSTAT)</li> <li>- Séries temporelles des disponibilités nutritionnelles (énergie, protéines) ; enquêtes nationales, FAO)</li> </ul> <p>Il apparaît que la disponibilité en kg par hab et par an du blé, des viandes rouges et du lait augmente régulièrement. Il apparaît que les disparités régionales sont minimales. Les niveaux de disponibilités céréaliers et laitiers sont</p>		

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	<p>satisfaisantes comparativement à ceux des pays voisins de l'Algérie et même européens. Les disponibilités en viandes rouges restent modestes. Les disponibilités nutritionnelles montrent une augmentation régulière des apports énergétiques en majorité d'origine végétale. Celles-ci grâce à la subvention du pain de farine, ont atteint un niveau très élevé et les gaspillages sont souvent mentionnés. Les disponibilités protéiques sont déséquilibrées par le faible apport animal malgré une évolution positive.</p> <p>Les subventions régulières et importantes moyennant les prix administrés bas du pain, de la semoule et le lait encouragent un modèle alimentaire de la population peu rationnel et occasionnant des pertes et gaspillages énormes. Des problèmes nutritionnels d'obésité commencent à se présenter comme un risque majeur.</p>
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Main response proposed to address the issue	<ul style="list-style-type: none"> <li>- Épurier la situation (terres privées) et améliorer le statut du foncier agricole (terres de l'état)</li> <li>- Protéger les terres agricoles de l'urbanisme et le développement de l'agroécologie</li> <li>- Augmenter la SAU irriguée</li> <li>- Améliorer l'appui technique et la formation des agriculteurs</li> <li>- Economiser l'eau</li> <li>- Tenir compte des changements climatiques par le développement de systèmes de production performants et résilients</li> <li>- Orienter les recherches sur le segment de consommation afin de promouvoir des politiques à même d'encourager un modèle alimentaire économe et plus adapté aux normes de santé et de nutrition</li> </ul>
Main actor(s) concerned or involved in the response proposed	<ul style="list-style-type: none"> <li>- Les pouvoirs publics (politique agricole, textes,....</li> <li>- Les instituts techniques, les universités, les centres de recherche, les ONG ;</li> <li>- Les organisations professionnelles et interprofessionnelles</li> <li>- La société civile notamment les organisations de consommateurs</li> </ul>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			<ul style="list-style-type: none"> <li>- Driver externe lié à la dépendance aux importations alimentaires, elles-mêmes liées au marché des</li> </ul>

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			<p>hydrocarbures</p> <ul style="list-style-type: none"> <li>- Driver interne aux systèmes alimentaires, comprenant notamment le modèle alimentaire occidental, occasionnant beaucoup de gaspillage et des problèmes d'obésité</li> </ul>
--	--	--	--

(*)	<i><b>Economic (and productive)</b></i>	<i><b>Social (and Cultural)</b></i>	<i><b>Environmental (resources, etc.)</b></i>	<i><b>Governance (institutions, rights, etc.)</b></i>	<i><b>Other (SPECIFY)</b></i>
Main nature of the issue	inefficience des systèmes de production techniques	Modèle d'alimentation et croissance démographique	<ul style="list-style-type: none"> <li>- Intensification inadaptée de l'agriculture occasionnant la dégradation des espaces et ressources naturelles</li> <li>- Manque de ressources en eau, sécheresse et réchauffement climatique</li> </ul>	<ul style="list-style-type: none"> <li>- Faible coordination entre les acteurs notamment dans les territoires</li> <li>- Faible organisation des acteurs, des producteurs et des consommateurs</li> <li>- Faible implication des producteurs et consommateurs</li> </ul>	
Nature of the main impact of the issue on FSN	Faible disponibilité interne et recours aux importations	Faible disponibilité, faible accès à la nourriture, manque d'éducation alimentaire et hygiénique	<p>Menace sur les chances d'un développement durable par la perte de biodiversité</p> <p>Menace d'érosion du sol</p> <p>Manque de disponibilités alimentaires du fait de la non utilisation de l'irrigation</p>	<ul style="list-style-type: none"> <li>- Inadaptation des politiques agricoles aux territoires</li> <li>- Faible complémentarité entre filières alimentaires sur un même territoire</li> <li>- Faible production et faible disponibilité alimentaire</li> </ul>	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Mes observations ont été faites à main levée et se basant sur mon expertise personnelle, la plupart sont le fruit d'une documentation et une recherche spécifique sur le sujet de la sécurité alimentaire en Algérie

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
73. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			
74. Breadth: Are there many people affected?				Many
75. Scale: local/national/regional/global?	Local	National	Regional	Global
		Algeria		

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

76. Impact on Availability	—
77. Impact on Access	0
78. Impact on Utilization/ nutrition	— —
79. Impact on Stability	— —
80. Impact on most vulnerable people	Enfants en bas age (proteins)
81. Impact on women	—
82. Impact on children	—
83. Impact on marginalized populations	Populations sahariennes et nomades
84. Cost to address the issue	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact		XX	XX
Moment to act to address the issue		XX	XX

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 6. Linkages with SDGs (1 to 17)<sup>7</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Goal 5. Achieve gender equality and empower all women and girls

Goal 6. Ensure availability and sustainable management of water and sanitation for all

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 10. Reduce inequality within and among countries

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12. Ensure sustainable consumption and production patterns

Goal 13. Take urgent action to combat climate change and its impacts\*

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

-

<sup>7</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



## 7. The case being, linkages with any other issue

--

## 8. Additional Supporting Information

*Additional information*

--

*Evidence*

--

*Knowledge gaps*

- Bases culturelles et sociologiques de l'alimentation des populations
- Modèles de consommation
- Diversité des ressources et produits alimentaires locales
- Economie de l'eau
- Agriculture intelligente vis-à-vis des changements climatiques
- Nutrition et santé
- Pêche et aquaculture

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(Université du Zimbabwe), Chinwe Ifejika Speranza (Université de Bonn), Dorothy Amwata (ILRI), Snorre Frid-Nielsen (Université de Copenhague), Samuel Partey (ICRISAT), Evan Girvetz (CIAT), Todd Rosenstock (ICRAF) et Bruce Campbell (CIAT) Avec les contributions de la FAO et de l'UNEP, 2015. L'Agriculture Intelligente face au Climat dans le Contexte Africain. Document de reference, Nourrir l'Afrique, Dakar, 21-23 octobre 2015. 31 p.

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Read

more: [http://www.nrcs-](http://www.nrcs-center.org/news/changement%20climatique,%20crise%20energetique%20et%20insecurite%20alimentaire%20%3A%20le%20monde%20en%20qu%C3%AAt%20d%E2%80%99un%20visage%20durable/)

[center.org/news/changement%20climatique,%20crise%20energetique%20et%20insecurite%20alimentaire%20%3A%20le%20monde%20en%20qu%C3%AAt%20d%E2%80%99un%20visage%20durable/](http://www.nrcs-center.org/news/changement%20climatique,%20crise%20energetique%20et%20insecurite%20alimentaire%20%3A%20le%20monde%20en%20qu%C3%AAt%20d%E2%80%99un%20visage%20durable/)

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Organisation for Economic Co-operation and Development (OECD)		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being			

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K4A Some current agro-food trade and domestic support policies are working against food security.</i>		
Description of the issue <i>in less than 5 lines</i>	Many agricultural support and trade policies have been used in support of food security around the world, primarily through food availability. But some actually work against that goal, penalizing poor households and working against adaptation to climate change.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	The OECD has explored the impact of trade and domestic support policies on agricultural markets and households through modeling and analytical tools. These include the OECD's trade model METRO; the OECD-FAO Aglink-Cosimo model; and the use of household data and analysis. These models, along with collection of detailed data on support provided to agriculture, have been used to assess current policy impacts and the effects of various reforms at a global and household level.		
Main response proposed to address the issue	Governments should commit to reaching agreement on further reforms to remove market distortions created by trade and domestic support policies. Given the costs associated with rising distortions, if agreement cannot be reached, instead of further delays in trying to negotiate modest levels of reform, reaching a binding agreement first that 'locks in' current trade policies and levels of support is of value. The agreement reached at the November 2015 WTO Ministerial takes some steps in this direction but more are needed.		

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Main actor(s) concerned or involved in the response proposed

All countries and the WTO.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		✓	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	✓		✓	✓	
Nature of the main impact of the issue on FSN	✓		✓	✓	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
85. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue
86. Breadth: Are there many people affected?	Few			Many
87. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
88. Impact on Availability	—			
89. Impact on Access	—			
90. Impact on Utilization/ nutrition	--			
91. Impact on Stability	—			
92. Impact on most vulnerable people	--			

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93. Impact on women			
94. Impact on children			
95. Impact on marginalized populations	Specify as appropriate		
96. Cost to address the issue	Low	<b>Middle</b>	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

Changes in policies create winners and losers. When undertaking reforms to current policies it will be necessary to shift the focus of current support to non-distorting and productivity enhancing forms. This will take effort for governments and require expenditures both real and in terms of political capital. For poor households who are net producers of the products in question, adequate social safety nets and other adjustment support will be needed.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	Now		
Moment to act to address the issue		Medium	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	<b>High</b>
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

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## 6. Linkages with SDGs (1 to 17)<sup>8</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

## 7. The case being, linkages with any other issue

## 8. Additional Supporting Information

*Additional information*

### **Improving agricultural trade and domestic support policies to enhance global food security**

A number of restrictive trade and domestic support policies used in agricultural markets are justified by the belief that such policies can positively contribute to food security. However, recent evidence suggests a number of these policies in fact work against food security both at a household level and at the global level.

- Without policy reforms, developments in agricultural markets and economies will not be enough to address food security over the medium term. While significant improvements can be expected between now and 2024, specific policy reforms are needed.
- Trade and domestic support policies aimed at increasing food production, do not achieve this result, but simply change the location of production. If current policies were not in place, the level of global production in agricultural products would be virtually unchanged. Instead, support provided to agriculture in some countries displaces production from elsewhere in the world. Further, when production of food products is included, current policies are likely to be having a negative overall effect. Trade and domestic support policies do not promote *global* food availability and thus nor do they contribute in this way to *global* food security.
- Current policies negatively affect global welfare. Changes in markets and policies since 2000 mean that the negative effect of current policies on welfare (proxied through household consumption) is now more uniform and is seen across most countries and regions studied. This is because: (i) developed regions have reduced and changed the nature of their support (e.g., the European Union no longer uses export subsidies and WTO Members have now agreed to permanently eliminate these globally); and (ii) developing countries trade much more with other

<sup>8</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

developing countries. Past scenarios where, due to reform, some countries lost benefits from lower food prices or faced costs from the loss of preferences (preference erosion) have been replaced with more uniform positive gains from reform. These effects have important implications for the accessibility dimension of food security.

- While overall, developed countries still stand to gain the most from reforms to agricultural markets (due often to the removal of their own distorting policies); the gains to developing countries are on average *three* times larger when reform efforts include other developing countries and require the same level of reductions in distorting policies as applied to developed countries.
- At the household level, evidence from some countries point to the negative and regressive effect that policies used to promote domestic production through trade barriers can have on households and food security. Higher domestic prices resulting from trade distorting domestic support often function as a regressive tax on the poor households, who devote a higher percentage of their income to food staples. In the case of both Indonesia and the Philippines, interventions in rice markets aimed at increasing domestic production to achieve self-sufficiency (and so then to help improve food security) have the opposite effect – that is, they decrease food security; in the Philippines, estimates suggest that they have increased the rate of undernourishment. Opening markets provides a means to improve outcomes and also provides for a better way to manage food insecurity risks.
- Restrictive trade and domestic support policies can also put at risk long term food security. In the presence of increasing shocks to domestic production from increasingly severe climatic events and unknown shifts in relative product specific production comparative advantages, the incentives created by policies that favour the production of one product over another directly work against needed adaptation responses. These can create incentives for producers to continue with unsustainable production practices, inflate food prices and increase the risks of climate change to domestic food production.

#### *Evidence*

Detailed evidence around these issues can be found in the following OECD publications:

OECD (2016), *Evolving Agricultural Policies and Markets: Implications for Multilateral Trade Reform*, OECD Publishing Paris, <http://dx.doi.org/10.1787/9789264264991-en>.

OECD (2016), “The Implications of Agricultural Trade and Market Developments for Food Security”, by Tallard, G., P. Liapis and G. Pilgrim, OECD Food, Agriculture and Fisheries Papers, No. 95, OECD Publishing, Paris <http://dx.doi.org/10.1787/5jlr579rkqwk-en>.

OECD (2015), *Managing Food Insecurity Risk: Analytical Framework and Application to Indonesia*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264233874-en>.

OECD (2016), *Agricultural Policy Monitoring and Evaluation 2016*, OECD Publishing, Paris, [http://dx.doi.org/10.1787/agr\\_pol-2016-en](http://dx.doi.org/10.1787/agr_pol-2016-en).

OECD (2017, forthcoming), *Agricultural Policies in the Philippines 2017*, OECD Publishing, Paris.

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*Knowledge gaps*

*References*

OECD (2016), *Evolving Agricultural Policies and Markets: Implications for Multilateral Trade Reform*, OECD Publishing Paris, <http://dx.doi.org/10.1787/9789264264991-en>.

OECD (2016), "The Implications of Agricultural Trade and Market Developments for Food Security", by Tallard, G., P. Liapis and G. Pilgrim, OECD Food, Agriculture and Fisheries Papers, No. 95, OECD Publishing, Paris <http://dx.doi.org/10.1787/5jlr579rkqwk-en>.

OECD (2015), *Managing Food Insecurity Risk: Analytical Framework and Application to Indonesia*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264233874-en>.

OECD (2016), *Agricultural Policy Monitoring and Evaluation 2016*, OECD Publishing, Paris, [http://dx.doi.org/10.1787/agr\\_pol-2016-en](http://dx.doi.org/10.1787/agr_pol-2016-en).

OECD (2017, forthcoming), *Agricultural Policies in the Philippines 2017*, OECD Publishing, Paris.

OECD (2013), *Global Food Security: Challenges for the Food and Agricultural System*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264195363-en>.



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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Katrin Glatzel, The Montpellier Malabo Panel, with Ousmane Badiane, IFPRI and Joachim von Braun, Bonn University		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	Sub-Saharan Africa		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K5A The role of innovation (institutional and technological) for achieving FNS in Africa.		
Description of the issue <i>in less than 5 lines</i>	There is a need for a better understanding of how, when and why institutional and technological innovation can bring about sustainable intensification for achieving FNS for smallholder farmers.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	-literature reviews -expert consultation -experience from the field -project and programme findings -farmers consultation and interviews -modelling		
Main response proposed to address the issue	Over the coming years, institutional and technological innovations will play a key role to help meet the challenges of a growing population, urbanization, a growing middle class with an increased demand for more varied and nutritious food coupled with climate change. We require a better understanding of how, when and why innovation can bring about the “sustainable intensification” of FNS and how it can best benefit the millions of smallholder farmers in Africa. These innovations need to be developed to meet the needs of smallholders in different agro-ecological environments, different skills and knowledge as well		

as local customs and traditions. They also need to take into consideration the type of enabling environment in which innovation can flourish and its potential be best leveraged for the benefit of smallholders, and women and children in particular. These innovations include first and foremost: digital technologies to help remove smallholders from isolation, biofortification to increase the nutritional value of crops and institutional changes/innovations.

#### **Biofortification**

The fortification of food has long been standard in developed countries and is now beginning to emerge in Africa as well. Rice in Ghana, maize in Zambia, and sweet potato in several countries including Mozambique, are now being fortified with vitamin A. And biofortification promises even bigger opportunities, as advances in genetics have made it easier to breed seeds with specific nutritional characteristics, such as high-zinc wheat and high-iron millet. In addition to that many crops also are bred with characteristics that make them drought or heat-tolerant or more resistant to diseases and pests.

#### *Case study 1 - orange fleshed sweet potato (OFSP)*

Sweet potatoes form a substantial and growing portion of diets across Africa. According to FAO, more than 21 million tonnes of sweet potatoes were produced in Africa in 2014, rising from approximately 14 million tonnes in 2004. However, in Africa, as in many parts of Asia, the dominant variety is the traditional white variety, which contains significantly lower amounts of vitamins than its orange cousin. Scientists at HarvestPlus and the International Potato Centre (CIP) have identified the most effective means of increasing beta-carotene content in the traditional white sweet potato. Just 125 grams of a fresh sweet potato root from most orange-fleshed varieties contains enough beta-carotene to provide the daily provitamin A needs of a pre-schooler. As such the OFSP is the single most successful example of micronutrient and vitamin biofortification. Moreover, the new varieties are high-yielding, drought-, pest- and disease-resistant too.

By augmenting the very base foods of the poor, biofortification is able to directly reach the populations where vitamin A deficiencies currently manifest highly. Moreover, targeting this intervention at farmer level increases dissemination to remote areas, without the need for infrastructure investments. This approach also enhances opportunities for scaling-up through farmer-to-farmer exchanges. Indeed, after the initial investment, the costs of scale and impact fall dramatically, making it a very cost-effective intervention.

#### *Case study 2 - Iron Pearl Millet*

	<p>Iron deficiency impairs cognitive development and behavior in children, and adults' ability to work. Severe anemia, often caused by iron deficiency, increases risks to women in childbirth, including death. Despite efforts to curb iron deficiency through supplements and fortified foods, iron deficiency remains the most widespread nutrition deficiency in the world, affecting 1.6 billion people.</p> <p>Pearl millet is eaten daily by more than 50 million people in the semi-arid regions of India and by millions of people in sub-Saharan Africa, including Senegal, Benin, Burkina Faso and Nigeria. Pearl millet bred to be richer in iron has been able to reverse iron deficiency in school-aged children in six months. In just four months, iron levels improved significantly. The same iron-rich pearl millet had been shown to provide iron-deficient children under the age of three with enough iron to meet their daily needs, and adult women with more than 70% of their daily needs.</p> <p>Scientists at ICRISAT and HarvestPlus have been able to breed high-iron pearl millet that not only provides children and women with the necessary iron intake, but also is high-yielding, drought resistant and mildew resistant.</p> <p><b><u>Digital technologies</u></b></p> <p>Making agriculture more "pro-nutrition" requires production diversification into more nutrient-dense foods; this requires revision of conventional food security paradigm which to date have focused on maximizing yields. It also requires research and investment in new technologies that support farmers to branch out into livestock production and nutrient-dense crops and vegetables. Examples include technologies that reduce post-harvest losses, such as solar driers to preserve perishable nutrient-rich foods like mangoes and green leafy vegetables. Extension-based efforts can also provide better information and equipment for intercropping and raising small livestock, and on-farms cold-chain technologies to facilitate the transport and sale of highly perishable produce and animal-source foods. It also includes the dissemination of nutrition and health information in local languages; SMS can remind families of child welfare visits, deliver simple nutrition information about child feeding, provide updates in market prices and fertilizer pick-up locations. SMS in local languages can also provide advice on healthy household meal practices, and social marketing can advocate for specific crops.</p> <p><i>Case study 1 – Shamba Shape-up</i></p> <p>Shamba Shake Up is an award winning East African TV show that targets smallholder farmers and combines weekly advice on soil health, crop choices</p>
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	<p>and cultivation, livestock care and nutrition. At the end of each episode, viewers are given the option to write an SMS to the programme producers to follow-up on subjects of interests.</p> <p><i>Case study 2- Wazazi Nipendeni – Tanzania mHealth</i></p> <p>The service offers reminders and informative text messages in Swahili to pregnant women, mothers with newborn babies up to 16 weeks old (continuing through to age 5) and supporters/caregivers of these women. The objective is to promote healthy pregnancy and early childhood care behaviour. In addition, the service seeks to assist health professionals in the dissemination of information typically shared during antenatal care (ANC) visits. The content promotes improved nutrition practices. For instance, nutritional messages range from information on timely iron and folic acid intake to maintaining a healthy, well balanced diet and drinking clean water, as well as breast feeding instructions. These messages can include simple instructions on how to treat early pregnancy nausea, to information on the importance of the first breast milk and how to observe and monitor the milk intake by babies.</p> <p><b><u>Institutional innovation</u></b></p> <p>Innovation in institutions and policies – the sets of rules which emerge from the attempt to structure social interactions – will be key for a new global food system that can achieve multiple SDGs, including the goals related to ending hunger, malnutrition, and poverty. Institutions and policies need to allow for the effective management of common resources and environmental services, the implementation of inclusive and strategic agricultural policies, and effective service delivery to the benefit of the poorest and most marginalized people.</p> <p><i>Case study 1 - engaging the private sector in Ethiopia to improve iodized salt access</i></p> <p>Over the past 5 years Ethiopia has made significant progress in improving iodine nutrition by iodizing salt. In 2005 iodine intakes were very low – national coverage of iodized salt was at 4.2% and 83% of school children had iodine deficiency and nearly 40% of children were identified with goiter. By 2014 more than 95% of households had access to iodized salt and 43% of households had access to adequately iodized salt. This increase appears to be largely due to improved supply chains, private-sector engagement, and public commitment to iodization legislation. The scaling-up of iodine intake has led to improvements of mental development in children and physical growth. The private sector played a crucial role through organizing itself in a producers association, establishing a cost recovery mechanism for Potassium iodate to ensure its</p>
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	<p>sustainable supply to producers by making it more affordable and by introducing quality assurance practices to get higher-iodized salt.</p> <p><i>Case study 2 – The Innovative Agricultural Research Initiative (iAGRI)</i></p> <p>The Innovative Agricultural Research Initiative (iAGRI) aims to strengthen training and collaborative research capacities of Sokoine University of Agriculture (SUA) and the Tanzanian Ministry of Agriculture, Livestock and Fisheries (MALF) with the goal of improving food security and agricultural productivity in Tanzania. The programme is supported through USAID's Feed The Future initiative and the Government of Tanzania (GoT) Comprehensive Africa Agricultural Development Programme Compact and Agricultural Sector Development Programme. The project is training the next generation of agricultural and nutrition leaders in Tanzania. Since 2011, it has placed 131 students, half of them women, in long-term advanced degree program training in the agricultural sciences, with particular focus on food and nutrition security. The project aims to prepare teachers, researchers and extension practitioners in Tanzania to cooperatively and effectively address needs of smallholder farmers, the growing agribusiness sector, and to find solutions to the country's food security challenges.</p> <p>This includes advocacy initiatives that ensure children are not underfed, and teaching basic nutrition and the avoidance of over nutrition to people in rural areas.</p>
Main actor(s) concerned or involved in the response proposed	<p>Smallholder farmers</p> <p>Extension agents</p> <p>Governments and institutions</p> <p>Private sector (including banks)</p> <p>Research institutions (e.g. breeders)</p> <p>Telecoms</p> <p>Seed companies</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	x		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	x	x	x	

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Nature of the main impact of the issue on FSN	x	x	x		
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(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
97. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			<b>Systemic issue</b>
98. Breadth: Are there many people affected?	Few			<b>Many</b>
99. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	<b>Global</b>
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
100. Impact on Availability	++			
101. Impact on Access	++			
102. Impact on Utilization/ nutrition	++			
103. Impact on Stability	+			
104. Impact on most vulnerable people	++			
105. Impact on women	++			
106. Impact on children	++			
107. Impact on marginalized populations	++			
108. Cost to address the issue	Low	<b>Middle</b>	<b>High</b>	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	x	x	x
Moment to act to address	x		

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the issue			
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(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 6. Linkages with SDGs (1 to 17)<sup>9</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Mainly:

#1

Also:

#2

#5

#9

#10

### 7. The case being, linkages with any other issue

<sup>9</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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## **8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

### **References**

Gatzweiler, F.W. and von Braun, J. (2016), Technological and Institutional Innovations for Marginalized Smallholders in Agricultural Development, Springer

Annan, K., Conway, G. and Dryden, S. (2016), African Farmers in the Digital Age, A Foreign Affairs Special Issue

The Global Nutrition Report 2016: From Promise to Impact, The International Food Policy Research Institute, 2016

The Innovative Agricultural Research Initiative (iAGRI) Tanzania: <http://iagri.org/>





## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Dr. Muhammad Azeem Khan, National Agricultural Research Centre	
Do you answer on behalf of your institution, or as an individual?	On behalf	--
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	--
Country of the responding individual/institution Please mention international or regional, the case being	Pakistan	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K6A Lack of farm level fruits and vegetable value chain and value addition causing post-harvest losses, price volatility that affects farm profitability, employment, food security and nutrition</i>		
Description of the issue <i>in less than 5 lines</i>	The markets in Pakistan have poor standards, lack basic hygiene and traceability, inconsistent grading practices and inefficient transportation services. Smallholders are mostly isolated from markets and are dependent upon middlemen to harvest and sell their produce, and as a result are often exploited. The consumers also suffer in terms of paying higher prices, which affects their purchasing power and have negative implications on household food security. Low productivity, high cost of agricultural inputs, high cost of marketing transport and high middlemen margins at the assembly level are the major issues of value chain. The key challenges in marketing and value chain are: a) lack of market intelligence and knowledge; b) lack of access to cold storage; c) poor packaging materials; e) lack of smallholder access to high end markets; and f) lack of value addition in agro based products		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	--	--	Both challenge as well as opportunity

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Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition

*In less than 10 lines.* Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.

Through conducting several farm level studies, survey, informal focus group discussion, market chain players interviews, feasibility studies, statistical data available. There have been surveys regarding post-harvest losses. The issues in the value chain of high value horticultural crops has been confirmed through great efforts regarding empirical research conducted in the field.

Main response proposed to address the issue

Following response is proposed to address the issue:

Improvement in planting materials, orchard management, capacity building of growers, contractors, labours, better infrastructure facilities are needed. Considering the yield gap at local, national and international level improvement in Productivity is crucial area of intervention, which requires co-coordinated efforts from research, extension and development organizations. The following strategic areas are suggested for improving production in Pakistan.

Introduce early and late maturing cultivars to extend time window.

Capacity building of research and extension staff, especially of extension officials. It is therefore recommended that private nurseries need to be supported to function on a commercial basis.

High cost of inputs like chemical fertilizer, pesticides, irrigation etc weaken horticulture sector competitiveness and it necessitate critical intervention that can result in increased access of farmers to farm inputs at cheap rate and services leading to higher profits. Coordinated efforts are needed for competitiveness by reducing the per unit production costs, post-harvest losses transaction cost and for improving export volume and value.

Low margin and high cost at farmer level and high margin at assembly level is another issue which need to be take care. Farmers need to be organized into groups/co-operatives so that they can increase their margin and competitiveness. Government departments need to revisit the existing marketing mechanism and explore

	<p>alternative ways to increase financial capacity of growers.</p> <p>Producers group or a co-operative of smallholders need to be established for strengthening their marketing capacity. Increased financial capacity of small holder can increase the share of self-marketing of their produce which insured more profit as compare to pre-harvest contract. This will help farmers to get organized, share knowledge and information and become entrepreneurs.</p> <p>Overall restructuring of existing fruit crops value chain is needed which ensure a fair return to smallholders in particular and whole chain competitiveness in general.</p> <p>To address vegetable value chain issues significant investment is needed to developed processing infrastructure, varieties improvement, capacity building of growers and promoting value chain linkages through public-private partnership.</p> <p>Efforts are needed to develop high yielding varieties and encourage farmers to plant only high quality seed/hybrid.</p> <p>There is a strong need to build farmers' capacity in proper vegetable farm management and to enhance their access to extension services and inputs like chemicals for pest control, fertilizers and technical advice. Such capacity includes training and financially empowering farmers through credit facilities by state level.</p> <p>Vertical coordination among farmer and processors and exporter need to be developed.</p> <p>To reduce post-harvest losses and cut down the marketing cost including packing material crates and strengthen market linkages there is needed to organize vegetable growers into groups/co-operatives so that they can assure a bulk supply of vegetables to markets throughout the year.</p>
<p>Main actor(s) concerned or involved in the response proposed</p>	<p>Provincial and Federal Government research and development institutions  Pakistan Horticulture Development Board  Vegetable and Fruit growers  Rural Support Programmes  Farmers Association  Processors and value chain actors  Market intermediaries  Food and Agriculture Organization</p>

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*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			The issue involved both external drivers as well as internal food systems. The external drivers include international modern production technologies (dependence on imported hybrids and cultivars), international standards, processing machinery, skilled human resources, and value chain expertise. Internal linkage of the issue includes lack of institutional support, low literacy among growers and other stakeholders, and weak market infrastructure.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (Resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	Low Investment capacity	Food and Income Poverty Lack of co-operatives and collective action	Lack of good agricultural practices adoption High chemical use Injudicious use of natural resources (land and water)	Market committees are not properly function The procedures of MCs not followed Not run by true representative of growers	
Nature of the main impact of the issue on FSN	Low productivity, wastage of high quality nutritious food Low purchasing power and hence food insecurity High food prices	Low gross margins High transaction costs Market exploitation High input prices	Polluted environment Contaminated and unhealthy food chain Degradation of natural resources	Market exploitation is high Higher market margins to market intermediaries Low share producers in consumer rupee	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further

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observation:

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
109. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue
110. Breadth: Are there many people affected?	Few			Many
111. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>South Asian Countries (SAARC Region)</i>	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
112. Impact on Availability	--			
113. Impact on Access	-			
114. Impact on Utilization/ nutrition	-			
115. Impact on Stability	--			
116. Impact on most vulnerable people	0			
117. Impact on women	-			
118. Impact on children	--			
119. Impact on marginalized populations	0			
120. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
Market systems are exploitative and operated by illegitimate actors that offer very low return to growers, low investments in technologies in value chain resulted into low quantity and quality of production, higher wastage, low level of processing and high prices of produce. This overall leads to have negative impacts on all the 4 pillars of food security.

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	Yes		
Moment to act to address the issue	Yes		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Incidence of malnutrition in the country is high. The prevalence of under-nourishment (POU) is 18 %, 77 % households are deficient in vitamin A, while 68% in iron and 40 % in zinc. This shows the impact of the issue of fruit and vegetable wastage on food security and it needs the immediate action to address this important issue.

### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There is lot of empirical data and findings of the studied related to this issue are available to provide the evidence regarding the nature and impact of this issue.

### 6. Linkages with SDGs (1 to 17)<sup>10</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

The most relevant SDGs with the issue are 1. No Poverty (Through increasing the profitability and avoiding the post-harvest losses), 2. No Hunger (Through increasing food availability and access through value addition, reduce wastage and reducing seasonality) 3. Good Health (Through improving the quality of the nutritious food), 8. Good Jobs and Economic Growth (Through employment generation in the farm level processing industry and increasing the productivity), 12. Responsible Consumption (Reducing the post-harvest losses and wastage along the value chain of highly perishable products) and 13. Protect the Planet (Judicious use of natural resources i.e land and water, and less use of soil and water pollutants like chemical fertilizers and pesticides). These SDGs can directly be achieved by improving the productivity, marketing and value chain of the high value agricultural products. The other SDGs which can be improved partially and indirectly by addressing the issue are 4. Quality Education, 6. Clean Water and Sanitation, and 9. Innovation and Infrastructure

### 7. The case being, linkages with any other issue

The focus of government is on major agricultural crops and its aligned agro based industry. The dairy sector is gaining some importance. The value addition of fruits and vegetables is almost negligible. The investor may be attracted to this sector. The demand of processed fruit and vegetable products need to be created.

<sup>10</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## 8. Additional Supporting Information

### ***Additional information***

Nature has blessed Pakistan with an ideal climate for growing a wide range of delicious fruits and vegetables. Thus a very wide range of tropical, sub-tropical and temperate fruits are grown in the country. Agriculture plays an important role in the economy of Pakistan because most of the rapidly increasing population resides in rural areas and depends on agriculture for subsistence. There is a tremendous increase both in the area as well as in the production of Mangoes, Citrus and tomato in Pakistan. These major horticulture crops are an important source of income for agricultural households in sample area. Mango and citrus exports contribute significantly in foreign exchange earning of Pakistan. The study on the value chain analysis of major horticultural crops in Punjab, Pakistan was carried out in 2013 to address the question; how efficient and equitable horticultural value chains are with respect to competitiveness, inclusiveness, scalability and sustainability. The value chain approach was applied to address the question of characterization of the horticultural crops value chains in Punjab, assess effects of vertical coordination on transaction costs and farm profitability identify stronger or different forms of integration that could sustainably improve wellbeing of smallholder and determine the policy implications for smallholders, agribusiness, public policy and investment priorities. Descriptive statistics was used to compare the value added and cost margins earned by each actor in the value chain system. Value chain analysis tool was used to describe the functions/roles of the actors involved in the value chain of major horticultural crops. The present status of major horticultural crops in the study area is as under:

- Pakistan's Punjab has Over 60 % area and Production of total fruits, and production and marketing of fruits provides employment for large number of laborers and transporters.
- It is highly suited to Pakistan's agro-climatic conditions and fits in well with the development goals of the country. At present the value chain is under-developed with large yield gap. Moreover, inferior communication and transport conditions and inadequate financial and information services also make it difficult to deliver the fruits efficiently to consumers.
- Among fruits mango is major fruit in term of production and export after citrus. Mangoes comprise the second largest area under cultivation among fruits. There is a tremendous increase both in the area as well as in the production of Mangoes in Pakistan. Mangoes are an important source of income for agricultural households in sample area. Mango export contributes significantly in foreign exchange earnings.
- Mangoes production in study area was one of the important livelihood activities. About 54 percent of total farm area of small farmers and 41 percent of large farmers was under mango orchards. According to survey 70 percent respondents were small farmers and 30 percent were large farmers. This indicates that promotion of the mangoes value chain is very relevant in the context of improvement in wellbeing of smallholder in the study area.
- World Citrus production is over 124 millions tones in 2009 while 42 percent of world citrus production comes from Asian region. Pakistan's production is 2.2 million tones and it is ranked as 13<sup>th</sup> largest producer in world. Pakistan is 3<sup>rd</sup> largest exporter in Asia. Other major citrus exporting countries include China, Turkey, Georgia and Israel.
- The major Citrus importing countries in 2008 were Russian federation, France, Germany, United Kingdom Netherlands, USA, Indonesia, Canada Poland and Italy.



The trade of citrus is global in scope and citrus is traded and consumed in all parts of the world.

- Pakistan's citrus are mostly exported to Afghanistan, Russian federation Iran and UAE. There are a number of registered exporters involved in the citrus export business. Pakistan's citrus sector represents two percent (2.2 million tonnes) of the world's total production. About 17 % of produce was exported in 2009-10.
- The soil type and climatic conditions are suitable for Citrus cultivation in the sample area. Citrus cultivation is feasible economic activity for, smallholders having more than 66 % citrus orchard of total farm land so development of citrus value chain will directly impacted livelihood of small holder.
- Based on 283 citrus growers randomly selected (76 % small growers having less than 12.5 acres land holding and 24 percent large growers having more than 12.5 acre) from the main production zones of Punjab Pakistan, the greater part of the citrus (94 %) produced by small farmers was sold to the traditional pre-harvest contract system whereas only 6 percent small farmers sold citrus as self-marketing.
- Citrus cultivation was one of the important livelihood activities as 66 % of farm area of small farmers 48% farm area of large farmers was under citrus orchards with and 5.9 acre and 24.9 acre of citrus orchard at small and large farms respectively.
- World tomato production is over 153 million tonnes in 2009 and Pakistan's production is 0.6 million tones and ranked as 35<sup>th</sup> largest producer in world. According to the FAO, 2009 the top producers of tomato in world are china, USA, India, Turkey and Egypt. Tomato production in Pakistan is on increasing trend over time from 0.2 million tonnes in 1990-91 to 0.6 million tonnes in 2008-09.
- The major tomato growing districts are located in the cotton-wheat and rice-wheat production system of Punjab Pakistan. The main focus of the study was Punjab province of Pakistan, which comprises 36 districts and tomato is grown in almost all districts however Muzaffargarh, Nankana sahib, Gujranwala and Sheikhupura district were major tomato growing areas contributing about 40 percent of tomato production of Punjab Pakistan were selected for study. Two categories of farmers were interviewed, small holder up to 12.5 acre farm area and large farmers having above 12.5 acre and above farm size. Focus of the study was on small farmers.
- Based on 150 tomato growers randomly selected from the main production districts of Punjab Pakistan, the greater part of our sample about 76 percent were small farmers and 24 percent were large farmer. A major part of produce was sold to the traditional wholesale market through commission agents. A small portion of the produce by the farmer was sold to processing factory for tomato products under vertical coordination.
- Tomato average area for smallholders was 1.63 acre which is 27% of total farm of small farmers and 5.12 acre area for large farms which is 17 % of total farm area of large farmers. This depicts the importance of tomato cultivation for smallholders.

#### **Evidence**

##### **Mango:**

- Mango produced in Pakistan Punjab reaches through two main distribution channels to the consumers. These channels yielded different level of value added in mango value chain. Under one of the main channel 71 percent of mango production by small farmers is routed through contractor under pre-harvest contract system. Under this channel there are three sub value chains; local, national and international by delivering mangoes to the consumers. Marketing chain operated by contractor market creates the



low value added for farmer. Farmers received lowest proportion of value added ranging from 4 to 5 percent only on the other hand farmer incurred about 38 percent of the total cost of marketing chains operated by pre-harvest contractors. The majority of smallholders are trapped due to lack of financial resources. They choose to operate at a sub-optimal subsistence level and prefer to sell their produce in the hand of contractors at low prices as compared to self-marketing. On the other hand these chains ensured higher value added for contractors. There is no vertical coordination between grower and processor/exporter under this system. Contractor as major player send 90 percent of his total purchase to commission agent and national/ terminal markets (outside from main growing areas) markets for better reward and only 9 percent is sold in local market. Only less than 1 percent was channeled to export market by the respondent contractors. Commission agents control the mango market and information channels. Commission agents usually operate from wholesale markets. Commission charges from contractors was 6.47 percent mango is auctioned to wholesalers, retailers, etc. The analysis showed that in all existing mango value chains high margins present at the marketing level (retailers followed by wholesalers, commission agents, and contractors) and low margins at farmer level

- About 29 percent small farmer perform self-marketing up to wholesale and export markets. Marketing chain operated by farmers by self-marketing creates the highest value added as compare to pre-harvest sale by farmers. As a result, these farmers received the high portion of the value added (11 to 14%), for performing harvesting and post harvesting operation up to wholesale market.
- Commission agent channeled mangoes 34 percent to local wholesalers, 39 to others terminal markets, and 27 percent to local retailers. Wholesalers get mangoes through auction from commission agents and sell out 73 percent to local retailers and 14 percent in terminal markets and 13 percent to local consumers directly. The result revealed that 27 percent local fruit retailers buy mangoes from commission agents and 73 percent retailers buy mangoes from wholesalers in wholesale market and sell mangoes to consumer after grading on their shops.
- There existed overall low mango productivity, and yield gap among large/small and global level. Some quality parameters of mango was extracted from survey. Based on contractor information regarding different grades of mangoes harvested and sorted, on an average 65 percent mangoes were in A grade, 24 percent fell in B grade and 11 percent in C grade. There was significant difference in the contractor sale prices of different grades of mangoes. Grade A, fetched Rs.32.50 per Kg, grade B, Rs.20 and grade C, Rs. 14. Weighted average price on the bases of volume of different was Rs. 27/ Kg at contractor level
- Major contributors towards high mango production cost were high land rent, high fertilizer costs, high transportation costs and high packing material cost putting pressure on mango competitiveness. On the other hand there were 13 percent complete loss while 18 percent partial loss to mangoes at post-harvest level. Large farmer faced a little lesser losses in this regard (12.9 and 13.4 percent complete and partial).
- The yield is very low due to the orchards not being properly managed, quality seedlings being hard to obtain, majority of the farmers make their own nursery. Harvest and post-harvest losses in mango need to be reduced to increase the income of the farmers. To reduce post-harvest losses and cut down on the cost of transport, the improvement of the road network, establishment of collection centers/cellar stores, and advice on the proper handling of fruits seems necessary.
- To strengthen market linkages, assistance is needed to organize Mangoes growers into groups/co-operatives so that they can assure a bulk supply of the required grade of

mangoes to exporters. Development and enforcement of a set of regulations and contractual norms may be needed to assure transparency and corporate social responsibility. Standardization of the measurement system is also necessary to maintain uniformity in business practices.

- Based on the findings of the current study, this set of recommendations is made both for improving production practices and the process of delivery to market. The value of mango in local as well as domestic market can be added through simple techniques of picking, packing, transportation and grading for which the capacity of the labor force engaged in the activity needs to be upgraded through training programs.
- The analysis of the economic viability of the horticultural sub-sector provided an empirical evidence of cost and profitability situation for different supply chain system in mango value chains in Pakistan. The results depicted higher efficiency, productivity with lower cost of transaction and post-harvest management along with more stable prices under the vertical coordination for both small and large farmers. However some discrepancies and discriminations against the small holders were reported in the form of less prices offered with high transaction cost as compared to large farmers in this system which needs to be investigated more empirically. Furthermore the risk due to price variability could be controlled through vertical coordination by developing a system of supply and demand from farm and market respectively. The formal sector with the development of processing and export sector could provide more competitive market in the horticultural system and overtime it could be expected that the small holders would be linked through vertical coordination as the smallholders are leader in the production cycle and the demands could not be met without taking them into the loop. This would increase the system efficiency and productivity increasing employment and income of the small farmers.

#### **Citrus:**

- The majority of smallholder farmers due to lack of finances and to avoid risk opt for pre-harvest contract as compared to self-marketing. Contractors as major player in citrus value chain send 62 percent (A grade) of his total purchase to exporters 24 % (mainly B Grade) in national/ terminal markets (outside from main growing areas) markets for better reward only 14 percent (C grade) sole to processors based on the quality of produce and market signals including grades and prices. There was no case for the modern market (the supermarket and food industry sectors). This shows a low penetration of modern market restructuring into the farmers level.
- Commission agents control the product and the information in the supply chain, more than any other participant. Commission agents usually operate from wholesale markets and charged 8.5 percent commission on an average. Commission agent channeled 45 percent citrus to local wholesalers, 36 percent to retailer 14 percent processors and 5 percent to exporters. Wholesalers get citrus through auction from commission agents and sell out 89 percent to local retailers, 5 percent to processors and 6 percent to local consumers directly. The analysis showed high margins in all existing value chains at the marketing level (retailers followed by wholesalers, commission agents, and contractors) and low margins at farmer level.
- *A major channel* involves pre-harvest contract of citrus orchards. It was noted that mostly the growers sell their orchard as a whole to contractors one or two months before harvest. The deal entirely depends on trusting each other and these contractors tend to be regular buyers of certain pockets of production or from certain

groups of farmers. The contractors perform transactional functions that involve buying arrangements, harvesting, sorting, grading and transport of fruits, overseeing the auctioning etc. Generally, the contractors make a profit because of their risk-taking functions and advance payments but sometimes they can also come out at a loss due to lower market prices. During the study it was observed that 94 percent small farmers sell their produce in the hand of contractors.

- *Other Channel* is self-marketing of citrus by growers, in which growers sell their produce after harvesting and packing. Result revealed that only 6 percent small and 4 percent large citrus grower involved in self-marketing in the citrus. The marketing chain operated by farmers self-marketing creates the highest value added (Rs.15.49 per kg), as compared to pre harvest contract and the farmers received the high portion of the value added (26 per cent) since the farmer performs harvesting and post-harvest operation up to wholesale market.
- The marketing chain through farmer to the export creates the highest value added (Rs. 37.68 per kg), and farmer received the higher portion of the value added (11 per cent).
- Marketing chain operated by contractors local and export creates the low value added for farmers. Farmers received lowest proportion of value added approximately 2 percent while farmers incurred 11 to 26 percent of the total cost in marketing chains operated by pre-harvest contractors. On the other hand these chains ensured higher value added for contractors.
- Harvest and post-harvest losses analysis revealed a 14% complete loss and 12% partial loss at small farms while both partial and complete loss was 8% each at large farms. The yield is very low due to poor management and orchard developed on uncertified informally produced seedlings.
- Suitability of promoting citrus in the context of poverty reduction along Value chain is very much positive and evident from the largest acreage in fruits in Pakistan and Citrus ranks 1<sup>st</sup> among the fruit crops in terms of export value and it significantly contributes to increase household income of rural poor of the growing areas. Value chain routed through small holder to exporter generated higher income for small holder however its share is significantly low which needs to be increased.
- The analysis of the economic viability of citrus sub-sector provided an empirical evidence of cost and profitability situation for different supply chain system. The results depicted higher efficiency, productivity with lower cost of transaction and post-harvest management along with more stable prices under the vertical coordination for both small and large farmers. However some discrepancies and discriminations against the small holders were reported in the form of less prices offered with high transaction cost as compared to large farmers in this system which needs to be investigated more empirically. Furthermore the risk due to price variability could be controlled through vertical coordination by developing a system of supply and demand from farm and market respectively. The formal sector with the development of processing and export sector could provide more competitive market in the horticultural system and overtime it could be expected that the small holders would be linked through vertical coordination as the smallholders are leader in the production cycle and the demands could not be met without taking them into the loop. This would increase the system

efficiency and productivity increasing employment and income of the small farmers.

### Tomato:

- Commission agents control the commodity and the information in the supply chain, more than any other participant. The commission agents are the second major source of market information and 32.3% of small farmers and 13.3% of large farmers get information from them. Commission agents usually operate from wholesale markets, where their tomato is auctioned to wholesalers and retailers etc. commission charges was 5 to 6 percent on an average in the sample area. The analysis showed high margins at the marketing level as compare to farm level in existing tomato value chains. High margin at retailers' level followed by wholesalers, commission agents, and farmer level. The majority of smallholder farmers are trapped due to lack of finances in this situation, in which as a result of risk aversion, they choose to operate at a sub-optimal subsistence level and prefer to sell their produce in the hand of commission agents.
- A major channel which identified, farmer sold their tomato to the traditional wholesale market .The tomato selling price at farmer level was 16.97 per kg. The tomato selling price at the retail market was Rs. 45.40 kg. The local market retail bought the tomato from the wholesale market at Rs.37.95 per kg. In this traditional value chain the value-added process occurred to any large degree at the retailer level followed by wholesale, and commission agent. The farmer produced the lowest value added 9 per cent, at a value of RS 16.97 per kg in the value chain. This chain produced a total value added of Rs 64.84 per kg.
- A small chain in which few farmers are involved is another value chain routed through farmers to processor revealed that selling price at farmer level was 12.68 per kg which is low as compare to major chain discussed above. The grower harvest tomato after full ripen stage to sell to the processor this has increased the about 24 %. Farmers harvest the tomato without packing transports them to tomato processing factory in this chain farmer save packing cost and commission charges also and earn more income per acre. In this chain farmer produced 7 percent value added from the process of tomato cultivation. This chain produced a total value added of Rs. 94.30 per kg.
- The tomato is potentially of great importance for pro-poor growth in Pakistan since it is the best option for many households who want to generate a cash income if more processing facilities are in place to overcome the price volatility and perishability. The production and marketing of tomato also provides seasonal employment for large number of labor and transporters. Recently, Pakistan entered in the export of tomato which is the good sign for farmers, exporters and country for generating foreign exchange.
- Overall, the prices received by farmers are low and marketing cost is high due poor access to market information and inadequate resources to compete with large producers having economies of scale. Moreover, inferior communication transport conditions, inadequate financial and information services also make it difficult to deliver the tomato efficiently to consumers. The small farmer yield of tomato is low as compare to large farmers in the sample area, however yield is reasonably high as compare to national average in the study area due to advances in technology more intensive use of hybrid seed and growing awareness about tomato cultivation. Comparing with the major producers of tomato in world Pakistan is far behind in yield.
- Based on the findings of the current study, this set of recommendations is made both for improving production practices and the process of delivery to market. it is suggested that significant investment is made in developing processing infrastructure,

varietals improvement, capacity building of growers and promoting value chain linkages through partnership with various government departments/units and concerned private sector organizations.

- The yield gap can be closed by raising knowledge, technology, skills and financial capacities of small landholders. These need access to technology, finance and training means and skills for the adoption of new technologies. Selection of technologies for small farmers needs very careful diagnosis of both the farmer's capacity and the technology. Integrated supports are very much required in all other areas, at least to complete one cycle of the process with appropriate tools, techniques, required financial supports for better inputs and better agricultural practices. In order to find out ways and means to increase the margin and consequently the incentive for the small farmers to produce tomato on commercial scale processing facilities should be developed to move from commodity to product a viable option.
- As opportunity tomato cultivation has proved to have a high potential for employment generation in general and for women and rural poor in particular. While as challenge increased price of major raw materials such as seeds, fertilizer, pesticides, fuel, limited value addition, supply and price variation due to seasonality of the product, lack of proper information on market demand, high cost of packaging and transportation, and high commission charges were the challenges for tomato production in Pakistan. There is need to increase production, productivity, and profitability of tomato cultivation, it is strongly recommended that a vertical coordination contract farming of tomato be undertaken with an aim of moving the product smoothly from production to marketing through processing and value addition along the value chain. This may ensure farmer level profitability and competitiveness of whole tomato value chain.

#### **Knowledge gaps**

- The most important inter linked constraints emerged from the horticulture value chain analysis are: (i) heavy pressure of pests and diseases, (ii) low yields, (iii) poor input supply (nurseries, fertilizer, irrigation, pesticides ), (iv) inadequate knowledge and skills that result in poor management of orchards, poor handling and inappropriate packing, (v) poor infrastructure (road networks, collection centers/packinghouses/grading facilities), (vi) limited access to credit facilities, (vii) high losses during post-harvest handling.
- There is need to adopt a more proactive approach to SPS management, focusing on building the awareness and capacities of primary producers and packer/processors. Moreover there is need to strengthening the systems for preventative risk management, via improved capacities for risk surveillance and supply chain monitoring and inspection.
- Yield fluctuations are commonly known as alternate bearing phenomenon (low yield in alternate year) is an important problem. The citrus industry as a whole is still underdeveloped with lack of competitiveness. Poor management during harvesting, transportation, packaging, and storage are major causes to the small export market (17 percent of total produce).
- Pakistani citrus has a great demand in international market but a higher number of seeds are one of big constraint. Moreover citrus has the longest growing period and is a late maturing variety with short processing period.



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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Dr. Nahla Hwalla, American University of Beirut		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	Lebanon		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K7A Methods to assess sustainability of food consumption patterns in absence of common metric</i>		
Description of the issue <i>in less than 5 lines</i>	An emerging issue is the assessment and advocacy of sustainable food consumption, considered across its multiple dimensions; and the scope of consumption patterns to drive change in production systems.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Quantitative assessments reveal the unsustainability of current food consumption patterns: We face persistent hunger and malnutrition; rising prevalence of overweight and obesity; adverse environmental impacts including pollution, greenhouse gas emissions, and food waste; and harmful social impacts to humans and animals. Evidence-based dietary guidelines for sustainable food consumption that are adaptable to local conditions are needed to overcome these challenges, because current unsustainability limits future food security.		

Main response proposed to address the issue	Theoretical research has begun to identify the multiple dimensions of sustainable diets (proposed dimensions include economic, environment, nutrition, food-related health, and socio-cultural). However, widespread agreement on the dimensions of sustainability and their relative importance has not yet been achieved. Researchers should now develop cross-dimensional tools to consolidate measures of sustainability that can be used to identify and therefore support sustainable food consumption patterns. FAO and IFPRI have developed global indices, but efforts must also develop country- and context-specific metrics and
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	indices that can be used to assess the quality of diverse food consumption patterns and evaluate their respective trade-offs.
Main actor(s) concerned or involved in the response proposed	Actors concerned with this issue include: researchers, governments and policymakers, private actors within the agri-food sector (including farmers, food producers, and actors along the supply chain), and consumers. Actors across all regions of the world should be concerned with this issue; however, to date, questions of sustainability and its assessment have largely been driven by actors in the global north and developed countries.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?		X	Briefly mention how this may be the case

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	X	X	X		X Nutritional
Nature of the main impact of the issue on FSN	X	X	X	X	X Nutritional

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

By definition, the question of sustainability is multi-dimensional and covers aspects including economic, socio-cultural, environmental, and nutritional.

## 3. Attributes of the Issue

	<i>Classification (**)</i>			
121. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue
122. Breadth: Are there many people affected?	Few			Many
123. Scale: local/national/regional/global?	Local	National	Regional	Global
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	



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For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

124.	Impact on Availability	+		
125.	Impact on Access	+		
126.	Impact on Utilization/nutrition	++		
127.	Impact on Stability	+		
128.	Impact on most vulnerable people	+ (Particularly strong impact on women of child-bearing age and children under the age of two.)		
129.	Impact on women	+		
130.	Impact on children	+		
131.	Impact on marginalized populations	+		
132.	Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

A consolidated metric to assess the sustainability of food consumption patterns should have a positive impact on some/all dimensions of food security, particularly utilization. Notably, nutrition must be considered a fundamental consideration across all four dimensions of food security.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Reaching a degree of consensus now – whether at national, regional, or global levels – on what constitutes a sustainable agri-food system will lay the groundwork for decades of change (or not) within complex agri-food systems involving a range of actors (from producers to consumers).

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Evidence from developed countries as to the lack of sustainability in their food consumption patterns is relatively more abundant and points at the need for change. Developing countries face data and

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knowledge gaps to properly assess the (un)sustainability of their agri-food systems and current diets.

## **6. Linkages with SDGs (1 to 17)<sup>11</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs.

Most relevant SDGs are SDG 2: Zero Hunger; SDG 12: Responsible Production and Consumption; and SDG 3: Good Health and Well-Being. These SDGs are most relevant to the issue of sustainable consumption, as sustainable food consumption seeks to ensure food security (a reduction in hunger) sustainable outcomes within the agri-food system, and positive impacts on human health.

The topic of sustainable consumption is also related to SDGs including SDG 1: No Poverty; SDG 6: Clean Water and Sanitation; SDG 8: Decent Work and Economic Growth; SDG 10: Reduced Inequalities; SDG 13: Climate Action; SDG 14: Life Below Water; SDG 15: Life on Land; and SDG 17: Partnerships for the Goals.

## **7. The case being, linkages with any other issue**

The critical issue of sustainable food consumption is related to a diversity of issues including agri-food production, natural resource use, rural development, incomes and poverty, education, and governance and policy implementation.

## **8. Additional Supporting Information**

### *Additional information*

Consensus on sustainability – its dimensions and the relative importance of different dimensions – may only lay the groundwork for adopting measures to promote sustainability of agri-food systems. Taking action will almost certainly require difficult decisions as to the optimal combination of public and private measures to advance sustainability, over different timelines and suited to local or regional contexts.

### *Evidence*

Efforts to document the sustainability of food systems have produced an assessment of the sustainability of the Mediterranean Diet, primarily focused on nutritional, socio-cultural, and environmental considerations. Work is ongoing at organizations including the United Nations Food and Agriculture Organization.

Elsewhere, public policymakers have attempted to introduce guidelines for human consumption that

<sup>11</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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explicitly incorporate both environmental and nutritional considerations. Dietary guidelines have been developed (and in some cases adopted) in Europe, the United Kingdom, and the United States.

#### *Knowledge gaps*

Considerable knowledge gaps remain as to the sustainability of consumption patterns, dietary guidelines, and food systems in developing countries. Data is limited in geographic scope, duration of time series, and range of indicators.

#### References

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Food and Agriculture Organization (FAO). (2012). "Sustainable Diets and Biodiversity: Directions and Solutions for Policy, Research and Action." In *Proceedings of the International Scientific Symposium on Biodiversity and Sustainable Diets: United Against Hunger*. FAO, Rome.

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Johnston, J., Fanzo, J. and Cogill, B. (2014). "Understanding sustainable diets: A descriptive analysis of the determinants and processes that influence diets and their impact on health, food security, and environmental sustainability." *Advances in Nutrition*, 5: 418-429.

Moomaw, W., Griffin, T., Kurczak, K. and Lomax, J. (2012). The critical role of global food consumption patterns in achieving sustainable food systems and food for all: A UNEP discussion paper. United Nations Environment Programme, Division of Technology, Industry and Economics, Paris.

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Delia Grace International Livestock Research Institute</b> d.grace@cgiar.org		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	ILRI is co-hosted by the governments of Kenya and Ethiopia and works globally, mainly in sub-Saharan Africa and Asia.		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K8A Evidence is emerging on the very high burden of food borne disease and its major impacts on human health, nutrition, market access, and livelihoods.</i>		
Description of the issue <i>in less than 5 lines</i>	<p>Foodborne disease (FBD) matters for FSN. It is a major public health problem. It presents a barrier to countries that wish to export and to smallholder farmers who wish to sell produce in high value domestic markets. It is also a major concern of consumers.</p> <p>Most of the known health burden of foodborne disease is caused by parasites, protozoa, bacteria and viruses in fresh animal source foods and vegetables. There are also major concerns, but major evidence gaps, on the health impacts of chemicals and fungal toxins in food.</p> <p>Developing countries bear most of the burden of FBD and FBD is probably increasing in developing countries</p>		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<p>Evidence that FBD is a critical issue for Food Security and Nutrition.</p> <p>It has long been recognised that food can be unsafe and that food safety is an integral part of food security. However, until recently there has been little comprehensive, credible data on the health burden of FBD. Much of the FBD burden is the result of gastroenteritis but it is difficult to attribute how much was due to gastro-enteritis: many considered (incorrectly) that most was due to</p>		

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	<p>inadequate water supply and sanitation.</p> <p>In 2015, the first global assessment of the burden of FBD was published by the World Health Organisation. The method used was very conservative. Still, the burden was similar to that caused by malaria, HIV/AIDs or tuberculosis making FBD a major public health issue.</p> <p>At the same time information has been growing on the high costs of FBD (although there is less evidence from developing countries) and the negative impacts of FBD on market access. Evidence is summarised in section 8.</p>
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Main response proposed to address the issue	<ol style="list-style-type: none"> <li>1. Improve food borne disease surveillance and reporting, starting with risk-targeting the most high risk products (animal source food and fresh produce)</li> <li>2. Build capacity (regional, national and local) in risk assessment, risk management and risk communication, again with a risk-based approach</li> <li>3. Leverage the private sector, especially the informal sector, to deliver food safety</li> <li>4. Develop better evidence on food safety risks, their impacts, perceptions and management</li> </ol>
Main actor(s) concerned or involved in the response proposed	<ol style="list-style-type: none"> <li>1. National health and veterinary systems supported by international organizations and research.</li> <li>2. Food safety managers supported by capacity building organisations.</li> <li>3. Food safety managers and private sector</li> <li>4. National and international research</li> </ol>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		Internal	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	x			Health
Nature of the main impact of the issue on FSN	x	x			Health

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The main impacts of FBD are illness, cost of illness, and exclusion from markets. These directly reduce

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peoples' ability to earn money and cause expenses which reduce access to food. In addition, FBD is a risk factor for stunting and malnutrition and aflatoxins may directly lead to stunting.

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
133. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
134. Breadth: Are there many people affected?				Many – several billion a year
135. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global: but 98% of burden in LMIC
For items 4-11 below, please use the classification [ — —, —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
136. Impact on Availability	--			
137. Impact on Access	--			
138. Impact on Utilization/ nutrition	--			
139. Impact on Stability	--			
140. Impact on most vulnerable people	--- Young, old, pregnant and immunocompromised are most biologically susceptible; poor are at risk of eating poor quality food			
141. Impact on women	----Women more biologically vulnerable to many FBD; occupationally vulnerable to disease acquired during food processing and cooking			
142. Impact on children	----Children more biologically vulnerable			
143. Impact on marginalized populations	--Marginalised may have dietary behaviours that put them at risk and also poverty and physical location may restrict access to safe food			
144. Cost to address the issue	Low **	Middle*	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

A variety of options are available for improving food safety: these vary from relatively inexpensive (capacity-building, evidence generation) to very expensive (infrastructure provision)

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	x	x	
Moment to act to address	x		

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the issue			
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(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The burden of FBD is already huge. The health burden is equivalent to malaria, HIV or TB and the economic and livelihood impacts are commensurate. However, FBD is likely to worsen in LMIC as the result of a) rapid increase in consumption of most risky foods (fresh animal source food and vegetables); b) rapid growth in value chains (especially those for livestock)

### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middlex	xHigh
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The health burden of FBD is relatively well known, although the global estimate of the FERG is likely an under-estimate

### 6. Linkages with SDGs (1 to 17)<sup>12</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

GOAL 3: Ensure healthy lives and promote well-being for all at all ages

<sup>12</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## 7. The case being, linkages with any other issue

Most risky foods are fresh foods in informal markets; these are mostly produced by smallholders and sold by women – hence link with poverty and gender

## 8. Additional Supporting Information

### *Additional information*

### *Evidence*

1. World Health Organisation first global report on the burden of FBD. [http://www.who.int/foodsafety/areas\\_work/foodborne-diseases/ferg/en/](http://www.who.int/foodsafety/areas_work/foodborne-diseases/ferg/en/)
2. **Grace, D.** 2015. *Food safety in developing countries: An overview*. UK: Evidence on Demand. [http://dx.doi.org/10.12774/eod\\_er.oct2015.graced](http://dx.doi.org/10.12774/eod_er.oct2015.graced)
3. **Grace, D.** and McDermott, J. 2015. Food safety: Reducing and managing food scares. In: International Food Policy Research Institute, *2014-2015 Global food policy report*. Washington, DC: International Food Policy Research Institute. pp. 41-50. <http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/129080>
4. Hawkes, C., **Grace, D.** and Thow, A.M. 2015. Trade liberalization, food, nutrition and health. In: Smith, R., Blouin, C., Mirza, Z., Beyer, P. and Drager, N. (eds), *Trade and health: Towards building a national strategy*. Geneva, Switzerland: World Health Organization. pp. 92-116. <http://www.who.int/phi/documents/trade-and-health/en/>
5. **Grace, D.** 2015. Food safety in low and middle income countries. *International Journal of Environmental Research and Public Health* 12(9): 10490-10507. <http://dx.doi.org/10.3390/ijerph120910490>
6. **Grace, D.**, Mahuku, G., Hoffmann, V., Atherstone, C., Upadhyaya, H.D. and Bandyopadhyay, R. 2015. International agricultural research to reduce food risks: Case studies on aflatoxins. *Food Security* 7(3): 569-582. <http://dx.doi.org/10.1007/s12571-015-0469-2>



**2<sup>nd</sup> Extension until 2 December 2016**

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*Knowledge gaps*

Full burden of foodborne disease.

Effective, feasible, scalable methods of improving food safety in mass markets in developing countries

*References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Paula Dominguez-Salas, International Livestock Research Institute		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	ILRI is co-hosted by the governments of Kenya and Ethiopia and works globally, mainly in sub-Saharan Africa and Asia.		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K8B Animal source foods (ASFs) can fall in two “extremes”, where there are segments of the population who eat too much, whilst other segments are eating too little.</i>		
Description of the issue <i>in less than 5 lines</i>	<p>The current ‘double burden’ that is coexistence of undernutrition (including micronutrient deficiencies) and overweight and obesity, is a major public health concern. It is thus paramount to get “the golden mean” in terms of nutrition, and ASFs play a key role in a balanced, healthy diet.</p> <p>ASF’s good quality protein and micronutrient profile makes it a desirable food group in deficient diets of poor households of developing countries, and particularly within the first 1,000 days. Conversely, the high consumption of ASF among wealthier groups has also been identified as a risk factor within the growing epidemics of non-communicable diseases (NCDs).</p>		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<p>Evidence that it is a critical issue for FSN:</p> <p>There is strong evidence that many poor communities have non-diverse diets, reliant on staples, oils and sugar and with low per capita consumption of ASF.</p> <p>There is also strong evidence that as people get richer they increase their consumption of ASF and this is associated with a less nutrient deficient diet and less malnutrition.</p> <p>There is strong evidence that as incomes improve, so consumption of ASF tends to exceed recommended levels.</p>		

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	<p>There is some evidence that interventions to increase consumption of ASF often do have the intended effect of increasing consumption of ASF; there is also some evidence that this leads to good nutrition and health outcomes. There is less evidence that interventions to increase livestock keeping have nutritional benefits.</p> <p>There is a strong association between over-consumption of ASF and poor health outcomes but there is more uncertainty over causal relations.</p>
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Main response proposed to address the issue	<p>Increased evidence/understanding/agreement in some critical issues related to ASF:</p> <ol style="list-style-type: none"> <li>1. What is the appropriate amount for different age groups?</li> <li>2. What are the most suitable ASF to meet these needs?</li> <li>3. How do we move from a “too little” and “too much” world of ASF consumption to the “just right” amount?</li> <li>4. How can ASFs contribute to addressing the ‘hidden hunger’ of nutrient deficiencies?</li> </ol>
Main actor(s) concerned or involved in the response proposed	<ol style="list-style-type: none"> <li>1. National and international research</li> <li>2. UN agencies related to nutrition (WHO, UNICEF, FAO)</li> <li>3. National health/agriculture authorities and policy-makers, supported by international organizations and research, including the CGIAR (such as (ILRI, and the CGIAR research programs on Agriculture for Nutrition and Health and on Livestock Agri-Food Systems.</li> <li>4. Private sector</li> </ol>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?		Internal	

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue					Health
Nature of the main impact of the issue on FSN					Health

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

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Both excess and deficiency of ASF are associated with suboptimal health conditions (e.g. stunting, non-communicable diseases etc.) and can ultimately lead to important economic and welfare losses, such as decreased cognitive development and work capacity, reduced disability-adjusted-life-years, disproportionate burden to health care systems, etc.

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
145. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
146. Breadth: Are there many people affected?				Many - billions
147. Scale: local/national/regional/global?				Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
148. Impact on Availability	0			
149. Impact on Access	0			
150. Impact on Utilization/ nutrition	++			
151. Impact on Stability	0			
152. Impact on most vulnerable people	++ Sufficient ASF consumption is particularly desirable in infants and young children, pregnant and lactating women, elderly people, etc. Excess is discommended to all			
153. Impact on women	++ Women have increased needs for micronutrient, and these are often deficient in diets in low and middle income countries. Taboos and cultural practices often impair woman consumption.			
154. Impact on children	++ Children have increased needs for micronutrient, and these are often deficient in diets in low and middle income countries. Taboos and cultural practices often impair child consumption.			
155. Impact on marginalized populations	++ Low-income households of low and middle income countries are the group more in need for increased ASF consumption. Also in high income countries, low income households might have higher consumption of lowest quality ASFs.			
156. Cost to address the issue		Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

More research might be necessary for evidence-based recommendations, but education and food environment policy options are available for reducing and increasing consumption, in different settings as necessary. However, better ways to deal with double burden within the same population are also needed.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X		
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The double burden is already a huge public health problem and a serious burden for many countries, and the demand of ASF is steadily growing, mostly among the populations which are already consuming them

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There are many areas of agreement, but there are still substantial areas of controversy among the nutrition community and the evidence is patchy and sometimes contradictory.

#### 6. Linkages with SDGs (1 to 17)<sup>13</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture;

SDG3: Ensure healthy lives and promote well-being for all ages.

<sup>13</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## 7. The case being, linkages with any other issue

The issue of ASFs needs to be looked upon within the framework of:

- A complete healthy diet, in the context of other foods;
- The existing food systems, supplying them in a sustainable manner.

## 8. Additional Supporting Information

### *Additional information*

### *Evidence of the Role of ASFs in nutrition*

- There are few studies looking at the effects of supplementation with ASF, but some positive results have been obtained.
- Milk consumption in schoolchildren has shown to have a positive effect in growth (Dror & Allen, 2011)
- Meat consumption in schoolchildren has shown effect in cognitive development (Neumann et al., 2007)
- The evidence on the role of milk and meat in non-communicable diseases is widely variably depending on the condition and inconclusive.

### *Knowledge gaps*

- Optimal contribution of ASF to protein and micronutrient intake, by different age groups
- Full burden in NCD attributable to ASF
- Effective and scalable interventions to deal with “double burden” of ASF consumption, particularly in LMICs

### *References*

- Review by ILRI/Chatham House on the influence of ASF on the nutrition of mother and infants during the first 1000 days of a child’s life in developing countries (being finalized).

### Links between ASF and nutrition

- Webb P. Impact Pathways from Agricultural Research to Improved Nutrition and Health: Literature Analysis and Research Priorities. 2013.
- Webb P and Kennedy E. Impact of agriculture on nutrition: nature of the evidence and research gaps. Food and Nutrition Bulletin, 2014, vol 35 (1): 126-132.
- Randolph TF, Schelling E, et al. Invited review: Role of livestock in human nutrition and health for poverty reduction in developing countries. Journal of animal science. 2007;85(11):2788-800.

### Benefits of ASF

- Neumann CG, Jiang L, et al. Meat supplementation increases arm muscle area in Kenyan schoolchildren. The British journal of nutrition. 2013;109(7):1230-40.
- Neumann CG, Murphy SP, et al. Meat supplementation improves growth, cognitive, and behavioral outcomes in Kenyan children. The Journal of nutrition. 2007;137(4):1119-23.
- Dror DK, Allen LH. The importance of milk and other animal-source foods for children in low-

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income countries. Food and nutrition bulletin. 2011;32(3):227-43.

High consumption

- WHO technical report series. Diet, Nutrition and the prevention of chronic diseases. Report of a Joint WHO/FAO Expert consultation (2003).
- World Cancer Research Fund/American Institute for Cancer Research. Food, Nutrition, Physical Activity, and the Prevention of cancer: A global perspective (2007).

Low consumption

- WHO guiding principles for complementary feeding of the breastfed child

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## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Isabelle Baltenweck and Steve Staal, ILRI		
Do you answer on behalf of your institution, or as an individual?	On behalf of institution		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	ILRI is co-hosted by the governments of Kenya and Ethiopia and works globally, mainly in sub-Saharan Africa and Asia.		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K8C Supporting small scale producers' participation in livestock value chains for an inclusive sector</i>		
Description of the issue <i>in less than 5 lines</i>	Ensure that women and men small scale producers are supported in livestock related policy, technology and development initiatives, for higher income and transition to a more inclusive livestock sector		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	<b>It depends</b> (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	The fact that most livestock products are produced on smallholder farms is an opportunity as to improve productivity and therefore direct access to animal source foods (ASF). On the other hand, smallholders face challenges in access to capital, technologies, know-how etc. As livestock value chains develop, women are also at risk of losing control over income, so institutional solutions are required to minimize this risk, especially given that one pathway for improved food security is through women empowerment.		
Main response proposed to address the issue	<ol style="list-style-type: none"> <li>1. Focus policy and development initiatives on the needs of the majority of the livestock producers- the smallholders</li> <li>2. Identify and implement win-win strategies with private sector to develop inclusive value chain development</li> </ol>		



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Main actor(s) concerned or involved in the response proposed

1. Governments at various levels
2. Private sector involved in livestock value chains
3. Producers organisations/ groups
4. Non-governmental development agencies
5. Research organizations including the CGIAR, particularly ILRI and the CGIAR research program on Livestock Agri-Food Systems.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		X	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X		X	Gender and youth
Nature of the main impact of the issue on FSN	X	X		X	Gender and youth

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

Participation livestock markets by the rural poor is particularly important given that demand for livestock producers is rapidly out-pacing demand for most other food products due to rising incomes and urbanization.

## 3. Attributes of the Issue

	Classification (**)			
157. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue X	
158. Breadth: Are there many people affected?	Few		Many X	
159. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global X

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

160. Impact on Availability	--
161. Impact on Access	--
162. Impact on Utilization/ nutrition	--
163. Impact on Stability	--

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164. Impact on most vulnerable people	Women and youth		
165. Impact on women	--		
166. Impact on children	--		
167. Impact on marginalized populations	Specify as appropriate		
168. Cost to address the issue	Low	Middle	HighX

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

Given the dominant role of smallholders in supplying livestock products in most developing countries, constraints to their improved performance negatively affect food security in all its aspects.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle X	High
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There is good evidence of the importance of smallholders in livestock production and the role they play in food security, but the data are not always comparable.

#### 6. Linkages with SDGs (1 to 17)<sup>14</sup>

<sup>14</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs  
SDG 1 on no poverty  
SDG 5 on gender equality  
SDG 10 on reduced inequalities

**7. The case being, linkages with any other issue**

Linkages with availability of animal source foods

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

Staal, S., MacMillan, S., Escarcha, J. and Grace, D. 2014. Livestock farming boosts local economies in developing countries. In: Griffiths, J. (ed). Deep Roots. Rome, Italy: FAO and Tudor Rose: 120-123

Njuki, J. and Sanginga, P.C. 2013. Women, livestock ownership and markets: Bridging the gender gap in eastern and southern Africa. London, UK: Routledge

Staal, S., Poole, J., Baltenweck, I., Mwacharo, J., Notenbaert, A., Randolph, T., Thorpe, W., Nzuma, J. and Herrero, M. 2009. Targeting strategic investment in livestock development as a vehicle for rural livelihoods. Bill and Melinda Gates Foundation - ILRI Knowledge Generation Project Report. Nairobi, Kenya: ILRI.

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## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Polly Ericksen, ILRI		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	ILRI is co-hosted by the governments of Kenya and Ethiopia and works globally, mainly in sub-Saharan Africa and Asia.		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	K8D There is growing concern about the environmental footprint of livestock production.		
Description of the issue <i>in less than 5 lines</i>	This concern is exacerbated by projections of increased consumption of animal source foods in developing countries. Interventions to reduce the footprint need to be aligned with interventions to improve food security and incomes		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Livestock is the main contributor of GHG emissions from the agriculture sector in developing countries, accounting for 80% of these. More locally livestock contribute to land degradation and may have negative impacts on water quality and quantity. These facts have been used to frame a global debate about the need to reduce consumption of animal source foods in order to achieve climate change targets and ensure the planet can feed itself sustainably. These arguments may undermine the contribution of livestock to food security and nutrition.		

Main response proposed to address the issue	<ol style="list-style-type: none"> <li>1. Amass evidence specific to developing country production contexts to more accurately evaluate the environmental footprint of livestock.</li> <li>2. Identify technical options that simultaneously improve productivity and reduce the environmental footprint of livestock production.</li> <li>3. Identify appropriate incentives and governance structures for broad adoption of the technical options.</li> </ol>
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	4. Assist national governments to align their agricultural growth and food security strategies with environmentally friendly production strategies.
Main actor(s) concerned or involved in the response proposed	Ministries of Environment and Livestock; researchers; livestock producer associations and livestock industry actors.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		x	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue			x	x	
Nature of the main impact of the issue on FSN	x				

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
169. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
170. Breadth: Are there many people affected?				Many
171. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

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For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

172. Impact on Availability	--
173. Impact on Access	--
174. Impact on Utilization/ nutrition	--
175. Impact on Stability	0
176. Impact on most vulnerable people	If cost of animal source foods increases or their consumption is discouraged populations with limited access to ASF will suffer.
177. Impact on women	
178. Impact on children	--
179. Impact on marginalized populations	
180. Cost to address the issue	Low Middle High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		X	X
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

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**6. Linkages with SDGs (1 to 17)<sup>15</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 13, Climate Action

12 Responsible consumption and production

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

<sup>15</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

Herrero, M. and Thornton, P.K. 2013. Livestock and global change: Emerging issues for sustainable food systems. PNAS 110: 20878-20881. <http://dx.doi.org/10.1073/pnas.1321844111>

Herrero, M., B. Henderson, P. Havlik, PK Thornton, RT Conant, P Smith, S Wirsenius, AN Hristov, P. Gerber, M. Gill, K. Butterbach-bahl, H. Valin, T. Garnett and E. Stehfest. 2016. Greenhouse gas mitigation potentials in the livestock sector. Nature Climate Change DOI: 10.1038/NCLIMATE2925

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Delia Grace, Isabelle Baltenweck, Paula Dominguez-Salas International Livestock Research Institute		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	ILRI is co-hosted by the governments of Kenya and Ethiopia and works globally, mainly in sub-Saharan Africa and Asia.		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K8E Availability of animal source foods for the poor.</i>		
Description of the issue <i>in less than 5 lines</i>	The poor, especially rural poor in low and middle income countries, consume relatively low amounts of animal source foods (ASF) and this contributes to low dietary diversity and poor nutrition security.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<p>The central problem is low availability and accessibility in populations who would benefit from more ASF. This is compounded by low quality and low safety of the ASF that is available/affordable. ASFs are a key dietary source of bioavailable micronutrients, yet poor people, especially the urban poor, consume low amounts of ASF.</p> <p>The potential for ASF to enhance nutrition and dietary quality is well known and the benefits of enhanced ASF consumption might be more marked in undernourished populations and with generally lower micronutrient intake. The available evidence includes observational studies and some randomized controlled trials, and previous reviews conclude that dairy products are beneficial to child growth and meat consumption could have positive effects on lean body mass, cognitive performance, and school test performance</p> <p>Other emerging issues are: The problem of food environments which provide too much access to animal source foods prepared in less health ways to populations at risk from over-consumption</p>		

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	<p>There are problems with the quality of ASF accessed. For example, Case studies of milk-based infant formula have often shown high levels of adulteration, lack of sufficient or appropriate ingredients, and poor preparation.</p> <p>There is also an issue with children less than 6 months of age getting inappropriate access to ASF, especially milk</p>
Main response proposed to address the issue	<ol style="list-style-type: none"> <li>5. Productivity increases to reduce yield gaps, especially among smallholder and pastoralist livestock keepers who are responsible for a majority of production in LMIC and also have the largest yield gaps</li> <li>6. Value chain development to increase the ability of markets to bring ASF to the poor.</li> <li>7. Incorporate nutrition in livestock development projects (nutrition-sensitive agriculture)</li> <li>8. Smarter use of ASF in food-provisioning such as in schools, refugee camps, to malnourished children and women of reproductive age</li> <li>9. Mainstream gender and equity in all of the above</li> </ol> <p>The subsidiary issues require activities around assuring the safety and quality of ASF, behavioural change communication for mothers, and improving the food environment.</p>
Main actor(s) concerned or involved in the response proposed	<ol style="list-style-type: none"> <li>5. Governments</li> <li>6. Development actors and NGOs</li> <li>7. Private sector</li> <li>8. National and international research</li> </ol>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<b>External driver</b>	<b>Internal to food systems</b>	<b>Both</b>
Is the issue either or both?		Internal	Briefly mention how this may be the case

(*)	<b>Economic (and productive)</b>	<b>Social (and Cultural)</b>	<b>Environmental (resources, etc.)</b>	<b>Governance (institutions, rights, etc.)</b>	<b>Other (SPECIFY)</b>
Main nature of the issue	x	X			Nutrition
Nature of the main impact of the issue on FSN	x	X			Nutrition

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

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Lack of availability of ASF contributes to poorer dietary diversity (3-4 food groups in the diversity scores consist of ASF) and, ultimately to malnutrition and stunting. There are other indirect links between ASF and nutrition including the role of livestock production in contributing to livelihoods (income, crop production, women empowerment, etc.)

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
181. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
182. Breadth: Are there many people affected?				Many – several billion a year
183. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Developing countries
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
184. Impact on Availability	---			
185. Impact on Access	--			
186. Impact on Utilization/ nutrition	--			
187. Impact on Stability	--			
188. Impact on most vulnerable people	--- Young, pregnant and ill have higher needs for palatable, nutrient dense food such as ASF			
189. Impact on women	-- Women may have less access to ASF for socio-cultural reasons; see above			
190. Impact on children	-- Children may also have less access to ASF for socio-cultural reasons; see above			
191. Impact on marginalized populations	Marginalised may have dietary behaviours that put them at risk and also poverty and physical location may restrict access to ASF			
192. Cost to address the issue	Low **	Middle*	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

A variety of options are available for improving access to ASF: these vary from direct provisioning, subsidizing, supporting livestock production and supporting livestock value chains.

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	

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Moment to act to address the issue

x

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Although fortunately overall trends are going down, the burden of malnutrition is still huge. Malnutrition in childhood is likely to lead to significant, negative, life-long impacts therefore action should start now

## 5. Degree of confidence

Solidity of currently available knowledge base.

Low

xMiddle

xHigh

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There is good evidence on the high levels of malnutrition and the low levels of ASF consumption in many, well –characterised, vulnerable populations. There is less evidence on the potential of interventions to increase consumption of ASF and the nutritional outcomes of this.

## 6. Linkages with SDGs (1 to 17)<sup>16</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 2 on zero hunger

SDG 3 on good health and well being

## 7. The case being, linkages with any other issue

ASF in developing countries are mostly produced by smallholders and sold by women – hence links with poverty and gender. As well as being highly nutritious, ASF are also the foods most prone to contamination and most implicated in foodborne disease, hence a link with health. There is also a link between consumption of ASF and non-communicable disease.

<sup>16</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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## 8. Additional Supporting Information

### *Additional information*

CGIAR Research Program on Livestock and Fish has a research agenda on access to animal source food. [www.livestockfish.cgiar.org](http://www.livestockfish.cgiar.org)

### *Evidence*

### *Knowledge gaps*

- How can nutrition sensitive livestock interventions improve availability and access to ASF for the most vulnerable populations?
- How specifically can the main drivers of ASF consumption (i.e. economic, cultural, etc) be successfully overcome?
- What is the optimal consumption of ASF, by age group?

### *References*

- Review by ILRI/Chatham House on the influence of ASF on the nutrition of mother and infants during the first 1000 days of a child's life in developing countries (forthcoming).
- Brown, 2003, Solutions exist for constraints to household production and retention of animal food products, <http://hdl.handle.net/10568/33013>
- Perry, B.D. and Grace, D. 2015. How growing complexity of consumer choices and drivers of consumption behaviour affect demand for animal source foods. *EcoHealth* 12(4): 703-712.
- Smith, J.W., Sones, K., Grace, D., MacMillan, S., Tarawali, S. and Herrero, M. 2013. Beyond milk, meat, and eggs: Role of livestock in food and nutrition security. *Animal Frontiers* 3(1): 6-13

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Dr Timothy Paul Robinson, Principal Scientist International Livestock Research Institute,</b> P.O. Box 30709, 00100 Nairobi, Kenya Tel: +254 20 422 3020 Email: <a href="mailto:t.robinson@cgiar.org">t.robinson@cgiar.org</a>		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	ILRI is co-hosted by the governments of Kenya and Ethiopia and works globally, mainly in sub-Saharan Africa and Asia.		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K8F Increasing use of antimicrobials in agriculture and the impact of this on antimicrobial resistance (AMR)</i>		
Description of the issue <i>in less than 5 lines</i>	Agriculture, livestock in particular, accounts for more than half of antimicrobial consumption and a growing body of evidence links this to the burden of AMR infections in people. Action against AMR must include mitigation in the livestock sector.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	(Opportunity)	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Evidence of antimicrobial consumption in livestock exceeding that in public health; this is increasing dramatically in response to livestock sector growth and intensification, particularly in low and middle-income countries; evidence links AMR development in livestock to AMR in the clinic; however, the relative roles of livestock, the environment and people in the evolution, persistence and spread of AMR genes are poorly understood.		
Main response proposed to address the issue	To generate evidence that will underpin changes in attitudes and behavior regarding the use of antimicrobials in food production. Specifically, evidence is needed to understand: current use and future trends in use of antimicrobials in livestock production; the biology of the evolution, persistence and spread of AMR genes; and the potential impact		

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	<p>of different interventions to mitigate livestock's contribution to AMR.</p> <p>This evidence needs then to be communicated effectively to the different stakeholders to bring about practice change.</p>
Main actor(s) concerned or involved in the response proposed	<p>Behaviour changes are required among livestock sector actors along the entire food chain, from input providers, through producers to retailers and consumers. This multi-sectoral and multi-stakeholder response will need to be coordinated and facilitated by international organizations responsible for sustainable livestock sector development; in particular the tripartite arrangement of FAO-OIE-WHO. It will require the support of the international donor community, and will call upon the international research community (the CGIAR and universities) to build the evidence on which to base technical, institutional and policy interventions. It will also call upon civil society, consumers and the retail industry to bring about attitude changes regarding the use of antimicrobials in food production.</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	x	x	External = growing demand for livestock products – based on population growth, economic growth and urbanization. Internal = over-reliance of antibiotics to increase production to meet growing demand.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	x	x	x	
Nature of the main impact of the issue on FSN	x	x	x	x	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: The problem of AMR is multifaceted with significant economic impacts; massive social implications in terms of the burden to human health and livelihoods; very important environmental implications; and important governance issues relating to mitigation options.

## 3. Attributes of the Issue



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	<b>Classification (**)</b>			
193. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue – it is acutely relevant to the inclusion of animal protein in food systems
194. Breadth: Are there many people affected?				Many – with a burden of AMR infections predicted to be 10M deaths in 2050
195. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global – it is a fundamentally global issue and likened to climate change in that regard
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
196. Impact on Availability	-			
197. Impact on Access	-			
198. Impact on Utilization/ nutrition	-			
199. Impact on Stability	-			
200. Impact on most vulnerable people	- - since the most vulnerable will suffer the consequence of lack of access to effective antimicrobials			
201. Impact on women				
202. Impact on children	- - currently, 230,000 of the estimated annual burden of 700,000 deaths attributed to AMR infections are due to neonatal sepsis			
203. Impact on marginalized populations	- - poor access to effective antimicrobials			
204. Cost to address the issue				High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: The actual cost is high (USD 40 billion over a ten year period), but with potentially very good returns to investment since the cost of neglecting the issue is estimated at USD 100 trillion in lost production between now and 2050.

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Moment to act to address the issue	X	X	X
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(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: The burden of AMR is already great (700,000 deaths per year) so there is an immediate issue, but more worrying is the projected growth of the problem (10 M deaths per year by 2050) if no action is taken. Both immediate, and long-term action needs to be taken.

### 5. Degree of confidence

Solidity of currently available knowledge base.			High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: whilst there remains a good deal of uncertainty about the burden of AMR on people, and the specific role of livestock in that (and thus the potential impact on FSN) there is no doubt that the issue is already substantial and will grow rapidly unless remedial action is taken.

### 6. Linkages with SDGs (1 to 17)<sup>17</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs: there are strong linkages with all SDGs relating to health, environment and nutrition and, in particular and most directly to the following:

1. No poverty
2. Zero hunger
3. Good health and well being
6. Clean water and sanitation
13. Climate action
14. Life below water
15. Life on land

<sup>17</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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## 7. The case being, linkages with any other issue

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## 8. Additional Supporting Information

*Additional information*

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*Evidence – See above*

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*Knowledge gaps – See above*

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**2<sup>nd</sup> Extension until 2 December 2016**

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resistance Report by the Secretariat, 68<sup>th</sup> World Health Assembly, Geneva.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	M S Swaminathan, Swaminathan Foundation		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being			

### 1. Overview of the issue

Issue <i>in 2 lines</i>	K9A Farming System for Nutrition		
Description of the issue <i>in less than 5 lines</i>			
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>			

Main response proposed to address the issue	
Main actor(s) concerned or involved in the response proposed	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
205. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
206. Breadth: Are there many people affected?	Few		Many	
207. Scale: local/national/regional/global?	Local	National	Regional	Global
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

208. Impact on Availability	
209. Impact on Access	
210. Impact on Utilization/nutrition	
211. Impact on Stability	
212. Impact on most vulnerable people	
213. Impact on women	
214. Impact on children	
215. Impact on marginalized populations	
216. Cost to address the issue	Low Middle High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>18</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs.

#### 7. The case being, linkages with any other issue

<sup>18</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

## **8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

### **References**

Prasun Kumar Das, R. V. Bhavani, M. S. Swaminathan. 2014. A Farming System Model to Leverage Agriculture for Nutritional Outcomes. Agric Res

Provided in attachment – link here: [http://www.fao.org/fileadmin/user\\_upload/hlpe/hlpe\\_documents/Critical-Emerging-Issues-2016/CEI-2016-K9-FSN\\_Paper.pdf](http://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/Critical-Emerging-Issues-2016/CEI-2016-K9-FSN_Paper.pdf)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	M S Swaminathan, Swaminathan Foundation		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being			

### 1. Overview of the issue

Issue <i>in 2 lines</i>	K9B Genetic gardens of biofortified crops		
Description of the issue <i>in less than 5 lines</i>			
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>			

Main response proposed to address the issue	
Main actor(s) concerned or involved in the response proposed	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
217. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
218. Breadth: Are there many people affected?	Few		Many	
219. Scale: local/national/regional/global?	Local	National	Regional	Global
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

220. Impact on Availability	
221. Impact on Access	
222. Impact on Utilization/nutrition	
223. Impact on Stability	
224. Impact on most vulnerable people	
225. Impact on women	
226. Impact on children	
227. Impact on marginalized populations	
228. Cost to address the issue	Low Middle High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>19</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs.

#### 7. The case being, linkages with any other issue

<sup>19</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

## **8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

### **References**

Global grid of genetic gardens of biofortified crops, Current Science, Vol. 111 no. 6. 25 September 2016  
Article provided in attachment – link here:  
[http://www.fao.org/fileadmin/user\\_upload/hlpe/hlpe\\_documents/Critical-Emerging-Issues-2016/CEI-2016-K9-Article.pdf](http://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/Critical-Emerging-Issues-2016/CEI-2016-K9-Article.pdf)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Zimbabwe Smallholder Organic Farmers Forum (ZIMSOFF)		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Zimbabwe		

#### 1. Overview of the issue

Issue in 2 lines	<i>K10A The push on monocultures is threatening the existence of community seed systems that contributes to quality nutrition that is based on diversity of plant genetic resources.</i>		
Description of the issue in less than 5 lines	Despite their critical social and ecological functions community seed systems face extinction due to the push by seed breeders' mono varieties enjoying full support of governments, research and development. It is a living fact that diverse and robust seed systems are critical in light of climate change, for food and nutrition security, and for the resilience of local economies. Maintaining and enhancing agricultural biodiversity to achieve food sovereignty is critical in light of these global challenges. Our experience has proved that community seeds play an important role in that.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box		Opportunity*	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Community seed systems are very complex and exist in the cultures and beliefs systems of smallholder farmers. To collect data there is an element to build trust with the local people such that they are able to share with you their livelihoods internal details. ZIMSOFF carried out households seed systems mapping exercise within one smallholder farmer organization per cluster to identify the existing local seed varieties, their uses and values, the varieties that are facing extinction; the preservation and maintenance of seed biodiversity; what is needed to protect and enhance community based seed systems; the social institutions and socio-economic factors that are supporting seed biodiversity and the		

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	<p>threats and factors associated current monocultures.</p> <p>We noted that diverse community seed systems still exist and their free exchange among farmers goes beyond mere exchange of seeds; it involves exchange of ideas and knowledge, of culture and heritage. It has become an accumulation of tradition, of knowledge on how to work the seed. Farmers gather knowledge about the seeds they want to grow in the future by watching them growing in other farmers' fields. This knowledge is based on the cultural, religious, drought and disease resistance, pest resistance and other values that the community accords to the seed and the plant it produces.</p>
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Main response proposed to address the issue	<p><b><i>Focus Area 1: Advocacy for farmer seed rights</i></b></p> <p>Increase understanding of socio-cultural political issues of the smallholder farmers to advocate against this process being pushed by the seed breeders has the greatest impact in the area of community seed systems.</p> <p><b><i>Focus Area 2: Infrastructure of seed systems</i></b></p> <p>There is need to strengthen seed production and conservation infrastructure at household and community level and to re-establish these where they have been lost. Formal dialogues, using exercises such as the diversity wheel, to assess the seed situation in the participating communities are envisaged. This process will also lead to the identification of seed lead farmers who will be strengthened as seed producers. This strengthening will cover seed production, selection, harvesting and storage. The strengthening will combine local knowledge and some technical input where necessary from outside.</p> <p><b><i>Focus Area 3: Trade and Exchange</i></b></p> <p>Stimulating greater trade and exchange of a variety of seed amongst farmers within communities and between communities needs support. The support should influence a movement towards an agroecology and seed sovereignty direction paying attention to Participatory Guarantee Systems (PGS) set ups for community seed systems and adequate documentation of the good practices.</p> <p><b><i>Focus Area 4: Capacity building</i></b></p> <p>Building capacity to increase knowledge and skills pool in relation to diverse community based seed systems within farming communities and their support services is one of the key areas that require support. Carefully designed exchange visits and the development of farmer-friendly seed handbooks will also circulate learning materials.</p>
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	<p><b>Focus Area 5: Research</b></p> <p>Strengthening links between farmer-led research and national and regional institutions under the auspices of Participatory Plant Breeding (PPB) is of paramount importance. The support will guarantee quality and quantity of seed produced and recycled among the peasant farmers.</p> <p><b>Focus area 6: Consumer education on health food styles</b></p> <p>There is need for awareness to change consumer perceptions towards thinking favourably about local and nutritious foods, to increase the knowledge amongst consumers about the benefits of eating healthy foods, to increase farmer knowledge on the benefits of producing diverse varieties of different crops and to influence Governments to incorporate promotion of local crops and foods in the relevant policies and strategies. Many people across the world are beginning to ask questions about diet and nutrition and food generally. This will provide a very good base to work from.</p>
Main actor(s) concerned or involved in the response proposed	<ul style="list-style-type: none"> <li>• Smallholder farmers</li> <li>• Consumers</li> <li>• Traditional institutions</li> <li>• Civil Society Organizations</li> <li>• Relevant Government departments</li> <li>• Research Institutions</li> </ul>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			The seed breeders are implementing the Green Revolution, a top-down approach, that targets smallholder farmers' rights, a one size fits all system based on UPOV 91 i.e. a centralized system meant for the EU Trade Systems, with information on the processes regarded as confidential, very limited if not non market access of smallholder farmers seeds because it is based on the Distinctiveness, Uniformity and Stability (DUS). Let alone very difficult for the



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			smallholder farmers to access the technology required for breeding, instead their role will be just to be growers, and most important ecologically and economically this law is not viable.
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(*)	<i><b>Economic (and productive)</b></i>	<i><b>Social (and Cultural)</b></i>	<i><b>Environmental (resources, etc.)</b></i>	<i><b>Governance (institutions, rights, etc.)</b></i>	<i><b>Other (SPECIFY)</b></i>
Main nature of the issue	*	*	*	*	
Nature of the main impact of the issue on FSN	*	*	*	*	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

Access and control over seed is the smallholder farmer's basic right. Seed is the first link in the food chain and the repository of life's future evolution and stability of biological diversity. As such, it is the smallholder farmer's inherent duty and responsibility to protect them and to pass them on to future generations.

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
229. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point **		Systemic issue	
230. Breadth: Are there many people affected?	Few		Many **	
231. Scale: local/national/regional/global?	Local	National	Regional	Global
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

232. Impact on Availability	— —
233. Impact on Access	— —
234. Impact on Utilization/ nutrition	— —
235. Impact on Stability	— —
236. Impact on most vulnerable people	— — women, youths and orphans
237. Impact on women	— —
238. Impact on children	— —

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239. Impact on marginalized populations	__ women, youths and orphans		
240. Cost to address the issue	Low **	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required.

Additional supporting or describing information, data, sources can be provided in section 8 below.

**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

Majority of the world's population are failing to have access to and control over a required balanced nutrition. Supporting and enhancing community seed systems will further increase access to good and affordable nutrition paying attention to the needs of local bio-cultural diversity conservation whilst supporting the livelihoods of the marginalized.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	*	*	*
Moment to act to address the issue	*		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

Producing a diversity of crops and their varieties brings immediate access to food even during drought seasons and therefore enhance community resilience in short term. As diversity continue to increase there is stability of the ecosystem in the medium and long terms

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low *	Middle	High
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**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

There are substantial negative perceptions as to the value or need to maintain this local agro biodiversity though it still exists. This is evidenced by the adoption of the monocultures gospel by many of the smallholder farmers as learning from government extension as opposed to diversification

#### 6. Linkages with SDGs (1 to 17)<sup>20</sup>

<sup>20</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

Goal number 2 which states that it is time to rethink how we grow, share and consume our food. Through experience we have observed that smallholder farmers are very aware that the control by a few has strangled the space between those who eat and those who produce that food; like a balloon being squeezed in the middle. The control of the food system is coming with the control of the seed and therefore the privatization of the food systems.

## **7. The case being, linkages with any other issue**

## **8. Additional Supporting Information**

### *Additional information*

The management and sustainable use of local seed varieties is important to sustain the livelihoods of poor communities who practice traditional farming systems and who live under harsh, often marginal, environments. The continued or increased use of local seed varieties is not only important to produce sufficient nutritious food but also plays a key role in providing regulating, supporting and cultural ecosystem services, by contributing to the resilience and sustainability of the agricultural ecosystems and enabling the maintenance of cultural traditions, particularly of indigenous peoples in rural communities.

The genetic resources of local varieties play a vital role in rehabilitating and restoring degraded ecosystems. Additionally, and of direct relevance to rural farming communities, can make vital contributions to supporting and diversifying the livelihoods of its custodians. It is important to note that community seed systems, while it is an essential component of agricultural ecosystems, are also a product of these same agro-ecosystems.

There is evidence that community seed systems are playing a vital role in maintaining agro bio diversity. Community seed systems are still existing and the reasons for maintaining this crop genetic diversity in the form of local varieties include: stability and risk avoidance; resilience, adaptation and adaptability to variable, difficult or marginal environments and to environmental change; provision of key ecosystem services such as pest and disease control, pollinator diversity, below ground diversity and soil health; socio-economic contributions such as meeting changing market demands, coping with distance to market and adult labour availability; dietary or nutritional value; and, meeting cultural and religious needs. Often a number of these reasons are operating together and resulting in cultivation of local varieties in a significant part of a production system in combination with hybrid varieties. Continually seeking to adapt to seed materials and to access new materials that will improve the production of nutritious foods within frameworks of risk avoidance and securing stable production is crucial.

Industrial agriculture has increasingly imposed its approach to farming on the world and pushing towards ever more protection for plant breeders' rights at the cost of farmers' rights. This has been stepped up in the last few years in Africa via the regional economic communities and ARIPO. This has seen the development of seed trade laws within both SADC and COMESA and the Plant Variety Protection protocol under ARIPO. This trend is likely to disrupt traditional lifestyles and destroy numerous species and knowledge about them, and shifting control over seed from the community to the individual through the notion of seed ownership for private profit thereby destroying that passion to secure food and nutrition security.

At the same time, opportunities to address these challenges are presenting themselves. The failures of the industrial and corporate Green Revolution farming model are increasingly revealing themselves, leading to new interest in agroecology, alternative models and the revaluation of smallholder farming systems. Farmers' seeds from the informal sector remain the mainstay of the seed system and to support this heritage, multiple initiatives, movements and platforms in the region have been formed and are growing to defend and strengthen peasant farming and seed diversity. There is need to discourage uniformity over diversity, quantity over quality of nutrition that has degraded our diets and gradually displaced the rich biodiversity of seed and food. The monocultures being promoted are based on a false creation boundary which is excluding both natures' and farmers' intelligence and creativity. This has created a legal boundary to disenfranchise farmers of their seed freedom and seed sovereignty, and imposing unjust seed laws to establish corporate monopoly on seed.

Agroecology is the truly green revolution we need for this today. It invites us to embrace the complexity of Nature: it sees such complexity not as a liability, but as an asset. The farmer, in this view, is a discoverer: he or she proceeds experimentally, by trial and error, observing what consequences follow from which combinations, and learning from what works best, even though the ultimate scientific explanation may remain elusive. This is empowering: the smallholder farmer is in the driver's seat, where he/she constructs the knowledge that works best in the local context in which she operates. In contrast, so-called "modern agriculture" which is in fact twentieth-century agriculture, did the exact opposite: it sought to simplify Nature. What to do on the field was defined by whatever was prescribed by science developed in laboratories. The path from research to practice was unidirectional, and it was seen as unproblematic: since solutions were based on science, they were considered universally applicable. The experiential knowledge of the farmer was irrelevant at best; at worst, it was treated as prejudice, and as an obstacle to the top-down implementation of sound scientific prescriptions from experts.

*Evidence*

*Knowledge gaps*

*References*

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**HLPE Inquiry**  
**Critical and Emerging Issues for Food Security and**  
**Nutrition**  
**Questionnaire**  
**(Please fill a separate form for each issue identified)**

About the respondent

Name, Surname and Institution	Prof. Eckhard George, IGZ - Leibniz Institute of Vegetable and Ornamental Crops		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Germany		

1. Overview of the issue

Issue <i>in 2 lines</i>	K11A Role of Agriculture and Food Security in Conflict and Emergency Situations		
Description of the issue <i>in less than 5 lines</i>	Food security is increasingly shaped by violent conflict, institutional fragility, and humanitarian emergencies. This requires more knowledge on how conflict, fragility and emergency interact with people's lives, livelihoods and food security.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	More than 40 researchers and practitioners from over ten countries and many disciplines convened at in Berlin 30-31 May 2016 to identify knowledge gaps that can and should be closed. A formal statement was adopted at the close of the meeting highlighting knowledge gaps and next steps.		

Main response proposed to address the issue	More knowledge is required on this key issue. Such knowledge can be generated by academic research or by practitioners through dedicated monitoring, evaluation and learning which places conflict analysis at the heart of the work on food security and nutrition. Hence a collaboration of different disciplines from natural sciences, public health and social sciences is required, including a large cross-disciplinary outreach and dissemination effort.
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Main actor(s) concerned or involved in the response proposed

- Research community such as IGZ
- International agencies such as FAO and other UN agencies
- National and local actors including governments and NGOs

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Conflict and food insecurity and highly endogenous, depending on circumstances.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	x	x	x	x (security)
Nature of the main impact of the issue on FSN	x	x	x	x	x (security)

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

**In 3 lines maximum, provide, if needed, a short explanation/justification of your answer, or any further observation:**

Both conflict/fragility and food security are highly complex socio-economic phenomena which rely on and interact with multiple drivers.

## 3. Attributes of the Issue

	Classification (**)			
241. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
242. Breadth: Are there many people affected?	Few			Many
243. Scale: local/national/regional/global?	Local	National	Regional	Global
		all countries classified as conflict-affected or fragile by, e.g., the World Bank	conflict and fragility have strong spillover effects on neighboring countries	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

244. Impact on Availability	- -
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245.	Impact on Access		- -
246.	Impact on Utilization/ nutrition		- -
247.	Impact on Stability		- -
248.	Impact on most vulnerable people		- -
249.	Impact on women		- -
250.	Impact on children		- -
251.	Impact on marginalized populations		- -
252.	Cost to address the issue	Low	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

The impact of conflict and fragility on food security can vary greatly. But at the extreme, its impact can be extremely severe, resulting in large scale starvation and death. The costs of learning more about the underlying processes and about effective interventions are relatively low.

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	x	x	x
Moment to act to address the issue	x	x	x

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

Violent conflicts/fragility are unlikely to disappear. Yet generating a better knowledge base to counter their impacts can be generated from now onwards.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Very low!		
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**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

Perhaps due to the complexities of the intersection topics, relatively little robust knowledge exists either on how food security interacts with conflict and fragility or on how to effectively counter the adverse effects of conflict and fragility.

#### 6. Linkages with SDGs (1 to 17)<sup>21</sup>

<sup>21</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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**First indicate the most relevant SDG and, the case being, links existing with other SDGs:**

The proposed topic lies exactly at the intersection of SDGs 2 (zero hunger) and SDP 16 (peace, justice and strong institutions).

**7. The case being, linkages with any other issue**

Clearly, addressing food security in conflict and fragile settings involves many other SDGs as well, such as SDG 1 (no poverty), SDG 5 (gender equality), SDG 6 (clean water and sanitation), SDG 15 (life on land), among others. These other issues may be relevant either as drivers of conflict and fragility or to create sustainable answers to the challenges at hand. For example, an intervention creating new inequalities unintentionally may lead to further conflict and food insecurity.

**8. Additional Supporting Information***Additional information*

IGZ - Leibniz Institute of Vegetable and Ornamental Crops (in Großbeeren near Berlin, Germany) is working in partnership with Humboldt-University of Berlin (in Berlin, Germany) and ISDC – International Security and Development Center (in Berlin, Germany) to advance a research agenda to promote food security in conflict, fragile and emergency settings. Further information is available upon request.

*Evidence*

Despite the notable decline in food insecurity worldwide in the last decade, 795 million people remain undernourished and many more suffer from hidden hunger. In emergency settings, moreover, the availability of, and the access to, nutritious food often continues to be a critical concern for victims of natural and human-made disasters. Ensuring sustainable food security for these people remains a challenge for the international community and national governments in light of unmet needs of and expectations for food aid, and in light of the often substantial environmental trade-offs that agriculture may entail. Under such circumstances, displaced individuals resort to various survival and coping strategies such as cultivating vegetable gardens for self-sustenance, or being forced to exploit natural resources inside protected areas. However, little to nothing is known about the impact of such strategies on well-being and food security, their impact on food security and the environment, and how interventions can strengthen their effectiveness for human development.



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### *Knowledge gaps*

Despite recent advances in academic research and despite the emphasis given to research on food security, for example by the Scientific Advisory Board of the UN Secretary-General in its meeting in Trieste last week, there remain both system-wide knowledge gaps as well as research questions focusing on the role of individuals, groups and institutions in creating, shaping and overcoming food insecurity in emergencies. The reliance only on national measures of food availability during crises disregards crucial individual-level, socio-economic variables relevant to understanding food security. These include, but are not limited to, variables measuring consumption, diet diversification, and malnutrition. With the increasing availability of household and individual-level data sources in emergency settings, it is feasible to provide meaningful measures of food security, as well as to undertake rigorous interdisciplinary causal-effect approaches including impact evaluations and analyses of food production from plants and animals, food access, production, and intake. However, this requires close collaborations both between practitioners and researchers in North and South, and across academic disciplines such as natural sciences, agricultural sciences, development economics, and disaster studies. Without the combination of these perspectives, food security and agriculture in emergency settings could not be understood in their entirety and possible policy responses would likely fail to overcome these challenges.

### *References*

- “The Role of Agriculture and Food Security in Conflict and Emergency Situations: Setting the Research Agenda”. Statement adopted by the KOSMOS Workshop, 30-31 May 2016, Humboldt-University of Berlin and IGZ. See <http://www.igzev.de/wp-content/uploads/2016/02/Berlin-Statement-2015-05-30-final.pdf>.
- Tilman Brück et al (2016). “Food Security and Violent Conflict.” Report to FAO, forthcoming.
- Tilman Brück et al (2016). “Conflict and Development: Recent Research Advances and Future Agendas.” Paper written for UNU-WIDER, forthcoming.
- [http://www.igzev.de/portfolio\\_type/portfolio-Brueck\\_Tilman](http://www.igzev.de/portfolio_type/portfolio-Brueck_Tilman)
- <http://www.hicn.org>
- <http://www.isd-center.org>



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Hilal Elver, UNHRC SR on Right to Food	
Do you answer on behalf of your institution, or as an individual?		As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	Turkey and USA. (I am answering it from global perspective)	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K12A Sustainable and healthy diets: Impact on human health and environment		
Description of the issue <i>in less than 5 lines</i>	Sustainable and healthy diets are still a key area that needs to be tackled. The way we eat and understand food is lacking significantly and consumers don't really understand the impact that food is making on the environment and on their health. Particularly the western diet, which implies high carbon, high water, excess nutrient has multiple damaging effects for both, the global north and the global south.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It is a huge challenge to tackle this topic, which is multi-actor and multi-sectorial based. At the same time we already have a lot of tools in place that can solve some of the issues in regards to the lack of sustainable diets.

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<p>Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition</p> <p><i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i></p>	<p>There are multidimensional indicators (nutrition, health, environment, human Rights and animal welfare, social and economic, as well as gender). Known methods to measure these such as measuring land use, production systems (such as agro-ecology v. industrial agriculture) carbon emissions, chemical use, nutrients beside Life Cycle Analysis (LCA). However, new methods need to be developed for both policy-makers and public on sustainable diets. The development of Sustainable dietary guidelines (SDGs) is key.</p>
<p>Main response proposed to address the issue</p>	<p>How to make dietary guidelines that respects environment, ecosystem, climate change, human health, human rights, considers cultural, economic, geographical differences, that is accessible and affordable especially for the vulnerable sector of the society.</p>
<p>Main actor(s) concerned or involved in the response proposed</p>	<p>This is a multi-actor issue. We need to involve all three pillars since they all interact with each other. Food and Drink businesses, Policy makers (national and local) and the civil society with it's NGOs and consumer rights parties.</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X	X	Drivers are multidimensional. External effects, such as climate change, ecosystem planetary limit; and internal drivers, such as high meat based western diets, industrial food systems, as well as poverty and inequality are issues that correlating and interdependent

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	Climate change
Nature of the main impact of the issue on FSN	X	X	X	X	

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(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: The issue is multidimensional (See description of the issue).

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
253. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			X Systemic issue
254. Breadth: Are there many people affected?	Few			X Many
255. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	X Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
256. Impact on Availability	+			
257. Impact on Access	++			
258. Impact on Utilization/ nutrition	++			
259. Impact on Stability	++			
260. Impact on most vulnerable people	Urban and rural poor			
261. Impact on women	++ (especially, pregnant and lactating women)			
262. Impact on children	++ (children under 2, and under 5)			
263. Impact on marginalized populations	Economic accessibility of nutritious diet is costly			
264. Cost to address the issue	Low	X Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: Multidimensional Indicators affect most fields that are listed 4-11. All of these fields are linked to each other and the issue of sustainable diets regards these fields in relation to each other. A systemic and structural approach is necessary.

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	As soon as possible	As soon as possible	As soon as possible

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(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: We already have some of the tools in place to investigate and understand the issues (see methods section) around sustainable diets. There is a global interest and political will dealing with nutrition issue after the ICN2 ( 2014), 2030 Sustainable Development Goals( 2015) and UN Decade of Nutrition (2016). We can act now with programs and structures in place and have an immediate impact. However, to reach the goals, State action is needed, and accountability and review mechanisms are vital.

## 5. Degree of confidence

Solidity of currently available knowledge base.	Low	X Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: I am not bale to evaluate technical knowledge in this area, but there is a strong global governance architecture on food security and nutrition is building.

## 6. Linkages with SDGs (1 to 17)<sup>22</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs: The SDG 2 (end hunger, achieve food security, and SDG 3 (good health and well being) are the most relevant goals. However, nutrition is interwoven throughout the SDGs. For instance, SDG 1 ( eliminate poverty), SDG 5 ( gender equality), SDG 6 ( clean water and sanitation), SDG 8 (decent work). SDG 10 (reduced inequalities), SDG 11 (sustainable cities), SDG 12 ( responsible consumption and production), SDG 13 ( Climate Action) are some of the Goals that directly and indirectly relevant to sustainable, healthy diet.

<sup>22</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/> and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**7. The case being, linkages with any other issue**

The sustainable and healthy diet is relevant to all existing critical and emerging issues for food security and nutrition. It is almost at the hearth of all work has been done and being done, and will be done.

**8. Additional Supporting Information***Additional information**Evidence*

There is a rising body of research available on sustainable diets and evidence from the FAO that sustainable diet issues are critical.

*Knowledge gaps*

More methods need to be developed to asses and understand issues around sustainable diets. International recognized standards on indicator need to be clarified, in order of measure the effects.

*References*

- Cindy Conner (2014), GROW A SUSTAINABLE DIET, New Society Publishers
- David A. Cleveland (2014), BALANCING ON A PLANET, University of California Press, Berkeley.
- FAO (2010): SUSTAINABLE DIETS AND BIODIVERSITY. Available at: <http://www.fao.org/3/a-i3022e.pdf>
- Tara Garnett 2014: "What is a sustainable diet". available at: [http://www.fcrn.org.uk/sites/default/files/fcrn\\_what\\_is\\_a\\_sustainable\\_healthy\\_diet\\_final.pdf](http://www.fcrn.org.uk/sites/default/files/fcrn_what_is_a_sustainable_healthy_diet_final.pdf)
- Anna Lappe(2010), DIET FOR HOT PLANET, Bloomsbury, USA
- Tim Lang (2015): "Sustainable Diets: Hairshirts or a better food future?"

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Dr. Nicholas Nisbett, Institute of Development Studies, UK		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	UK		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K13A Nutrition governance and accountability		
Description of the issue <i>in less than 5 lines</i>	Nutrition governance and accountability still requires a concerted focus at global, national and subnational levels to build commitment, increase government responsiveness and deliver better services.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	<p>Country case studies, literature reviews, multi-country data analysis, commitment indices.</p> <p>Gillespie S, Haddad L, Mannar V, Menon P, Nisbett N (2013) and the Maternal and Child Nutrition Study Group. The politics of reducing malnutrition: building commitment and accelerating progress. The Lancet 2013; published online June 6. <a href="http://dx.doi.org/10.1016/S0140-6736(13)60842-9">http://dx.doi.org/10.1016/S0140-6736(13)60842-9</a>.</p> <p>Nisbett, N., Gillespie, S., Haddad, L., Harris, J. (2014). Why Worry about the Politics of Child Nutrition? World Development Vol. 64, pp. 420–433, 2014</p> <p>te Lintelo, D. J., Haddad, L. J., Leavy, J., &amp; Lakshman, R. (2014). Measuring the commitment to reduce hunger: A hunger reduction commitment index. <i>Food Policy</i>, 44, 115-128.</p> <p>Smith, L. C., &amp; Haddad, L. (2015). Reducing child undernutrition: past drivers and priorities for the post-MDG era. <i>World Development</i>, 68, 180-204.</p>		

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	<p>te Lintelo, D. J., &amp; Lakshman, R. W. (2015). Equate and Conflate: Political Commitment to Hunger and Undernutrition Reduction in Five High-Burden Countries. <i>World Development</i>, 76, 280-292.</p> <p>Nisbett, N., Wach, E., Haddad, L., El-Arifeen, S., 'What drives and constrains effective leadership in tackling child undernutrition? Findings from Bangladesh, Ethiopia, India and Kenya' Food Policy Volume 53, May 2015, Pages 33–45</p>
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Main response proposed to address the issue	<p>Invest in :</p> <ol style="list-style-type: none"> <li>1) Measuring and building commitment at global, national and subnational levels – see e.g. <a href="http://www.nepad.org/content/introducing-new-partnership-nutrition-accountability-africa">http://www.nepad.org/content/introducing-new-partnership-nutrition-accountability-africa</a></li> <li>2) Identifying and building nutrition leadership (see <a href="https://www.ifpri.org/publication/championing-nutrition-effective-leadership-action">https://www.ifpri.org/publication/championing-nutrition-effective-leadership-action</a>)</li> <li>3) New forms of community led and social accountability focused on nutrition (see <a href="http://globalnutritionreport.org/files/2014/11/gnr14_pn4g_19nisbett.pdf">http://globalnutritionreport.org/files/2014/11/gnr14_pn4g_19nisbett.pdf</a>)</li> </ol>
Main actor(s) concerned or involved in the response proposed	Civil Society, UN organizations, NEPAD, research organizations.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			Briefly mention how this may be the case

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue					
Nature of the main impact of					



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the issue on FSN

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
265. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue
266. Breadth: Are there many people affected?	Few			Many
267. Scale: local/national/regional/global?	Local	National	Regional	Global
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
268. Impact on Availability				
269. Impact on Access				
270. Impact on Utilization/ nutrition				
271. Impact on Stability				
272. Impact on most vulnerable people	Specify as appropriate			
273. Impact on women				
274. Impact on children				
275. Impact on marginalized populations	Specify as appropriate			
276. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**5. Degree of confidence**

Solidity of currently available knowledge base.

Low

Middle

High

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**6. Linkages with SDGs (1 to 17)<sup>23</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**7. The case being, linkages with any other issue**

<sup>23</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

## **8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Laura Murray-Kolb, The Pennsylvania State University		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	USA		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K14A The need for tools which accurately measure food insecurity worldwide.		
Description of the issue <i>in less than 5 lines</i>	Although food insecurity is a major issue worldwide, we lack a simple tool to accurately measure it at the household level. This makes it difficult to compare situations and hinders policymakers' ability to make informed decisions regarding resource allocation.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	As a professor who teaches a course on Global Nutrition issues, I provide my students with information on food insecurity and ways to assess it. I have them read the primary literature on this topic, only to realize that we do not yet have a validated measure to use across multiple cultures. Without such a measure, we are essentially paralyzed in our ability to respond to the need because we can't properly assess the need.		
Main response proposed to address the issue	Building upon the issues that were highlighted in the Journal of Nutrition nearly 10 years ago, a committee of experts could be convened to discuss the known commonalities of household food insecurity across cultures. These commonalities should then be taken into consideration and the committee needs to move forward on developing a measurement tool that can then be validated in multiple cultures.		

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Main actor(s) concerned or involved in the response proposed

Scientists with expertise in the measurement of household food insecurity.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue		X			
Nature of the main impact of the issue on FSN				X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Social/cultural variations make it difficult to develop a universal tool for measuring household food insecurity. Lack of a universal tool then becomes an issue for policy makers (often within governments) as they lack the information needed to make informed decisions regarding allocation of resources.

## 3. Attributes of the Issue

	Classification (**)			
277. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue
278. Breadth: Are there many people affected?	Few			Many
279. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global

For items 4-11 below, please use the classification [ — , —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

280. Impact on Availability	+ if policymakers know where to allocate resources
281. Impact on Access	+ if policymakers know where to allocate resources
282. Impact on Utilization/ nutrition	+ if policymakers know where to allocate resources

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283. Impact on Stability	+ if policymakers know where to allocate resources		
284. Impact on most vulnerable people	+ if policymakers know where to allocate resources		
285. Impact on women	+ if policymakers know where to allocate resources		
286. Impact on children	+ if policymakers know where to allocate resources		
287. Impact on marginalized populations	+ if policymakers know where to allocate resources		
288. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
The problem outlined above is one of not having a valid measurement tool for food insecurity. Before we can start impacting availability, access, specific populations, etc, in a targeted manner, we need to know where the problems lie so that resources can be properly allocated.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>24</sup>

<sup>24</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

The most relevant SDG is #2: “End hunger, achieve food security and improve nutrition and promote sustainable agriculture.” If we can properly identify where the food insecurity lies and what the underlie issues are for the food insecurity, then resources can be targeted at reducing food insecurity.

Links to other SDGs include:

#3: “Ensure healthy lives and promote well-being for all at all ages.” If food insecurity is addressed, individuals will have a better chance at being healthy.

#4: “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.” Children often miss school because they are ill and/or hungry. If food insecurity is reduced, children are likely to be healthier and have a lower chance of dropping out of school.

#### **7. The case being, linkages with any other issue**

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

Journal of Nutrition, Volume 136, No. 5 (the entire supplement)  
Advances in Nutrition, Volume 4, pages 481 – 505, 2013



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## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Prof. Martin Cole, CSIRO Agriculture and Food		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being			

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K15A Role of science and technology against the demand curve for future food security</i>		
Description of the issue <i>in less than 5 lines</i>			
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>			

Main response proposed to address the issue	
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Main actor(s) concerned or involved in the response proposed

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
289. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
290. Breadth: Are there many people affected?	Few		Many	
291. Scale: local/national/regional/global?	Local	National	Regional	Global
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
292. Impact on Availability	+			
293. Impact on Access	+			
294. Impact on Utilization/nutrition	++			
295. Impact on Stability	+			

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296.	Impact on most vulnerable people	+		
297.	Impact on women	+		
298.	Impact on children	+		
299.	Impact on marginalized populations	+		
300.	Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

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**6. Linkages with SDGs (1 to 17)<sup>25</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs.

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

<sup>25</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

#### References

Mary Ann Augustin , Malcolm Riley, Regine Stockmann, Louise Bennett, Andreas Kahl, Trevor Lockett, Megan Osmond, Peerasak Sanguansri, Welma Stonehouse, Ian Zajac, Lynne Cobiac. 2016. Role of food processing in food and nutrition security, Trends in Food Science & Technology 56 (2016) 115e125.

Brian A.Keating, MarioHerrero,PeterS.Carberry,JohnGardner,MartinB.Cole. 2014. Food wedges:Framing the global food demand and supply challenge towards 2050. Global FoodSecurity3(2014)125–132.

#### Further attachments:

[http://www.fao.org/fileadmin/user\\_upload/hlpe/hlpe\\_documents/Critical-Emerging-Issues-2016/CEI-2016-K15\\_Augustin-et-al-Food-security-2016.pdf](http://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/Critical-Emerging-Issues-2016/CEI-2016-K15_Augustin-et-al-Food-security-2016.pdf)

[http://www.fao.org/fileadmin/user\\_upload/hlpe/hlpe\\_documents/Critical-Emerging-Issues-2016/CEI-2016-K15\\_Global\\_Food\\_Security\\_Food\\_Wedges\\_August\\_2014.pdf](http://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/Critical-Emerging-Issues-2016/CEI-2016-K15_Global_Food_Security_Food_Wedges_August_2014.pdf)

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Lauren Phillips, IFAD	
Do you answer on behalf of your institution, or as an individual?	On behalf of IFAD	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K16A How to deliver on rising food demand against ongoing degradation of natural resource base</i>		
Description of the issue <i>in less than 5 lines</i>	The impact of natural resource degradation (in a context also marked by climate change) for global food systems, with particular attention to land, soil and water degradation, against expectations and pressure on agricultural supply to increase substantially between now and 2030/50.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Research on natural resource management, as well as links to research on climate change and food security, evidence from IFAD's project and lending portfolio and evidence from other Rome Based Agencies (RBAs).		

Main response proposed to address the issue	It is generally understood and agreed that addressing natural resource degradation in agriculture and food systems requires a combination of actions to limit degradation, to restore existing resources, and to improve the management of existing resources so as to balance environmental sustainability concerns with the effort to increase supply. This is also the spirit of the formulation of SDG2, which combines sustainable agriculture with food security and nutrition into a single goal. To achieve this on a global scale and in different contexts requires, however, a clear understanding among all relevant actors about the state of play in terms of natural resource degradation in different
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	contexts, what space actually exists to limit or reverse degradation in different areas, and what are the actions to be taken in order to achieve this, what approaches (technological, practice/management-related, and institutional) are best suited to balancing food supply increase with environmental preservation or restoration, and what role is there for international coordination in support to these actions.
Main actor(s) concerned or involved in the response proposed	International actors (including specialized funds and other sources of development finance), national governments, local / regional governments, civil society actors, including organizations of and for the rural poor, and research oriented institutions.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	x	x	The production of food has a direct impact on natural resource availability (and is therefore internal) and is also affected by the impacts of other activities on natural resources (and therefore is external to food systems).

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue			x		
Nature of the main impact of the issue on FSN	x	x	x	x	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)
301. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Systemic issue
302. Breadth: Are there many people affected?	Many

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303. Scale: local/national/regional/global?	Local	National	Regional	
			Acute in states across the income divide and across continents. Particularly acute in countries in tropical zones, where soil degradation is notable, water is constrained and the combined impacts of climate change are more extreme. Poor management of natural resources during previous periods also contributes – thus governance is an issue.	Global

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

304. Impact on Availability	-		
305. Impact on Access	--		
306. Impact on Utilization/ nutrition	-		
307. Impact on Stability	--		
308. Impact on most vulnerable people	--		
309. Impact on women	--		
310. Impact on children	--		
311. Impact on marginalized populations	--		
312. Cost to address the issue			High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Natural resource degradation has a very negative impact on availability and access to food, as it constrains the capacity to produce to meet needs. Additionally, conflict over natural resources is well documented in the literature, contributing to negative trends on stability. Finally, the impact on vulnerable groups, women and children are extreme as these populations are often most dependent on natural resources to sustain their food and nutrition security.



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Addressing the challenges that natural resource degradation presents for food security requires short term solutions for farmers facing challenges in production, medium term interventions to prevent further degradation and begin systems on a path of being recovered, and long term solutions to prevent back slipping and institutionalize positive progress.

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

While there is emerging evidence on the impact of natural resource degradation on food security and nutrition, there is more limited evidence about best approaches to work in an integrated fashion in specific contexts, and how to tailor approaches to national and local needs.

#### 6. Linkages with SDGs (1 to 17)<sup>26</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 1 (No poverty), 2 (Zero hunger), and 13 (Climate Action), 14 (Life Below Water), 15 (Life on Land).

<sup>26</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## 7. The case being, linkages with any other issue

Climate change is highly related, as natural resource degradation increases the impact of climate change and enhances vulnerability to climate change as well as creating stronger and more constraining needs for adaptation.

## 8. Additional Supporting Information

### *Additional information*

Natural resource degradation, and its impact on food security and nutrition, should be combatted through a mix of technical innovations and policy solutions. Technical solutions, in abstract without context and without consideration for accompanying spaces in which solutions are being applied, are likely to suffer from weak take up and implementation. Thus, the research agenda on this topic needs to be multi-faceted and consider the challenges for governance and implementation.

### *Evidence*

There is emerging evidence on ways that communities, local authorities and national authorities can work successful to restore natural resources and thereby enhance food security (and potentially, nutrition, though this requires specific activities and approaches). However, there remains a need to look critically at the sustainability and implementation of these approaches, as well as their governance and sources of financing and technical expertise.

### *Knowledge gaps*

Knowledge gaps are particularly about how to bring proposed interventions to scale given severe capacity and resource constraints, how to generate good evidence about what works, how to manage, in an integrated fashion amongst levels of actors and interests natural resource rehabilitation.

### *References*

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**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Lauren Phillips, IFAD	
Do you answer on behalf of your institution, or as an individual?	On behalf of IFAD	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K16B Significant challenges for delivery on FSN due to governance and capacity constraints</i>		
Description of the issue <i>in less than 5 lines</i>	Weak governance, poor institutions and limited capacity remain a significant constraint to achieving FSN and the 2030 Agenda, and have been exacerbated by the trend towards decentralization.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Development and political science theory, literature from the fields of development and political science, evidence from IFAD's project and lending portfolio as well as survey results about challenges for implementation, and the work of other IFIs and UN agencies which demonstrate similar experience.		

Main response proposed to address the issue	While there is a great deal of literature on the general governance conditions and national level institutions which facilitate development, there is less detailed information about the specific features of institutions and governance structures needed to encourage rural development outcomes. Additionally, literature on the downsides of decentralization are also relatively scant and high level, and do not address the real challenges decentralization generates for delivering development outcomes. The purpose of identifying weak governance and institutions at the national and sub-national level as a critical and emerging issue for food security would be to identify the specific challenges decentralization and weak governance play in the delivery of food security – an
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	area which has not to date received sufficient attention.
Main actor(s) concerned or involved in the response proposed	National governments, local / regional governments, development actors, including UN specialized agencies

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	x	x	Because governance, institutions and capacity can be both broader and specific to food systems, the challenges fall in both categories.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue				X	
Nature of the main impact of the issue on FSN	x	x		x	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
313. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
314. Breadth: Are there many people affected?				Many
315. Scale: local/national/regional/global?	Local	National	Regional	Global

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			Especially acute in many low income states, where national capacity is low, though middle income countries too suffer from lower capacity, particularly at sub-national level in federations
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For items 4-11 below, please use the classification [ — —, —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

316.	Impact on Availability	-
317.	Impact on Access	--
318.	Impact on Utilization/ nutrition	-
319.	Impact on Stability	--
320.	Impact on most vulnerable people	--
321.	Impact on women	-
322.	Impact on children	-
323.	Impact on marginalized populations	--
324.	Cost to address the issue	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Governance and institutions have an impact on all aspects of availability, access and stability, as indicated above. The impact on women and children is not more negative than it is for other parts of the population, but if marginalized populations were to include displaced people, the impact would be larger.

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X

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Moment to act to address the issue	X	X	X
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(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Governance and institutions require long, medium and short term interventions as poor governance has implications across these three time periods.

### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

While there is a large body of evidence showing that poor governance and institutions has strong impacts on outcomes in food and nutrition security, there is less evidence about how well targeted interventions can solve such problems.

### 6. Linkages with SDGs (1 to 17)<sup>27</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 1 (No poverty), 2 (Zero hunger), and 16 (Peace, justice and strong institutions).

<sup>27</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## 7. The case being, linkages with any other issue

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## 8. Additional Supporting Information

### *Additional information*

Food security policy and governance is highly politicized in many countries, and the objectives and interests of donors create a further layer of complexity in identifying solutions to governance and institutional bottlenecks to achieving food security. Thus, an approach which utilizes a political economy lens to understand political interests is probably necessary.

### *Evidence*

Addressing food security requires coordination across a broad range of actors at different levels – global, regional, national and local. The distribution of authority, as well as the institutions through which authority passes, are critical factors in making progress. This issue has been examined through the lens of, for example, multi-level governance and multi-actor approaches (see for example a seminar organized by the Istituto Affari Internazionale at [http://www.iai.it/sites/default/files/expo\\_150911.pdf](http://www.iai.it/sites/default/files/expo_150911.pdf)), and also is consistent with a large range of literature on the importance of institutions and governance for delivering development outcomes (for an overview of governance in Africa see an early piece by the World Bank entitled "Sub-Saharan Africa: From Crisis to Sustainable Growth: A long term perspective").

### *Knowledge gaps*

The challenges of governance on food security issues are not as well explored as the impact of poor governance and institutions on development outcomes more broadly. Additionally, the literature on decentralization has mostly taken an approach which focuses on the capacity to rationalize and improve spending, rather than looking at service delivery for food security and related issues.

### *References*

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Paarlberg, Robert. (2002). "Governance and Food Security in an Age of Globalization." IFPRI Food, Agriculture, and the Environment Discussion Paper 36. Washington, D.C.: International Food Policy Research Institute.

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UNDESA (2016). "Overview of the Institutional Arrangements for Implementing the 2030 Agenda at the National Level." Policy Brief, Zero Draft (July). Available [here](#).

UNDP (2004). "Decentralised Governance for Development: A Combined Practice Note on Decentralisation, Local Governance and Urban/Rural Development." UNDP Practice Note (April).

Waage, Jeff et al (2015). "Governing the UN Sustainable Development Goals: interactions, infrastructures, and institutions." *The Lancet Global Health*, vol. 3, no. 5: 251-252.



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	IFAD	
Do you answer on behalf of your institution, or as an individual?	On behalf ✓	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International institution based in Italy.	

#### 1. Overview of the issue

Issue in 2 lines	<i>K16C Transformation of food systems and their scope for creating youth employment in food insecure regions</i>		
Description of the issue in less than 5 lines	Changes in agri-food systems can impact on the quantity and quality of jobs available in rural areas. With a "youth bulge" in many countries with high levels of poverty/ food insecurity (notably in SSA), these require analysis to inform policy responses.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	Challenge	Opportunity	It depends (it is an opportunity if the right policies and investments are made to engage youth in food systems employment, but also a challenge if many jobs are lost in agri-food system transformation).
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Literature review and discussion with experts in-house confirmed the growing importance of this issue, as well as its particular predominance in regions and countries where prevalence and risk of food and nutrition insecurity is highest. Review of IFAD country strategies, strategic documents and content of recently published flagship <i>Rural Development Report</i> validate the importance of this issue.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	<ul style="list-style-type: none"> <li>• Further research/analysis to understand shifting employment trends in agricultural/food systems.</li> <li>• Effective targeting of policies/programmes at young rural people</li> <li>• Greater efforts to enable young people to participate in relevant planning/policy processes</li> <li>• Appropriate and adapted capacity development approaches, focusing especially on training, extension and education in rural areas</li> <li>• Emphasis and sensitivity to employment impacts of different interventions and approaches to developing food systems.</li> </ul>
Main actor(s) concerned or involved in the response proposed	<ul style="list-style-type: none"> <li>• National governments</li> <li>• Regional authorities</li> <li>• UN specialized agencies</li> <li>• Research institutions and think tanks from different parts of the world</li> <li>• Private sector</li> </ul>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			A variety of external demand and supply-side phenomena are at play relating to urbanization, higher incomes, market structures, technology development. At the same time, structure of organization, production and constraints related to participation of young people within food systems also characterize the issue.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	✓	✓		✓	
Nature of the main impact of the issue on FSN	✓	✓			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

observation:

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
325. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue ✓
326. Breadth: Are there many people affected?	Few			Many ✓
327. Scale: local/national/regional/global?	Local Indicate here the precise location	National Indicate here the precise country	Regional Especially stark in sub-Saharan Africa and South Asia (youth populations also rising in North Africa and middle East)	Global
For items 4-11 below, please use the classification [ — — , — , 0 , + , ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
328. Impact on Availability	Depends on context and on response-			
329. Impact on Access	Ditto			
330. Impact on Utilization/ nutrition	Ditto			
331. Impact on Stability	Ditto			
332. Impact on most vulnerable people	Rural youth, especially young women, adversely impacted if decent employment not available for them.			
333. Impact on women	Same as above			
334. Impact on children	Depends on context and on response			
335. Impact on marginalized populations	Likely stark given labour markets often replicate wider discrimination patterns (youth, women, ethnic minorities likely adversely impacted).			
336. Cost to address the issue	Low	Middle ✓	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
Note that impacts could be positive if appropriate policies and investments create decent employment within food systems, and equip youth with necessary skills and means to take advantage of available opportunities.

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#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	✓	✓	✓
Moment to act to address the issue	✓	✓	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The issue is already impacting labour markets, food systems and (especially youth) livelihoods and will continue to do so for decades in SSA. In South Asia, North Africa and the Middle East the immediate need is similar, though numbers of youth will begin to decline by 2030, thus removing the urgency of the issue in these regions in the long-term.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle ✓	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Trajectories on demographic and labour market transitions are well-validated in the literature, including in IFAD's recently launched *Rural Development Report*.

#### 6. Linkages with SDGs (1 to 17)<sup>28</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 8 (decent work) is the most obvious link; strong direct linkages with SDG 2 (zero hunger); and 10 (reduced inequalities); also highly relevant for SDG 1 (end poverty); 4 (quality education); and 5 (gender equality).

<sup>28</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

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## 7. The case being, linkages with any other issue

The degree to which youth, being arguably among the potentially most dynamic and energetic members of rural communities, are engaged in agri-food systems will clearly influence prospects to address issues related to agricultural productivity and innovation in the decades ahead. Further, challenges related to sustainable urbanization are linked to factors such as the extent and nature of labour migration from rural areas, itself dependent upon the attractiveness of employment opportunities in agri-food sectors.

## 8. Additional Supporting Information

### *Additional information*

Agri-food sectors will need to play a key role in addressing youth employment challenges in many African countries and LDCs in the decades ahead.

### *Evidence*

According to the literature, approximately 60% of the population of SSA is under the age of 25 (UNDESA 2013); approximately 300 million youth will enter the labour market in SSA in the next 15 years; urban sectors not projected to have sufficient absorptive capacity for labour influx (Jayne et al 2014). At the same time, case studies are showing ageing of many rural and agricultural communities (e.g. Leavy and Hossain [2014]).

### *Knowledge gaps*

The extent of ageing of agriculture and its precise consequences on productivity and innovation are not known, with existing hypothesis depending largely on case studies and anecdotal evidence. Understanding of rural youth aspirations and the extent to which their engagement in agriculture boosts dynamism and innovation is not yet validated.

### *References*

IFAD. 2016. Rural Development Report. Rome: IFAD Available at: <https://www.ifad.org/ruraldevelopmentreport>

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Leavy, J and Hossain, N. 2014. Who wants to farm? Youth Aspirations, Opportunities and Rising Food Prices. Brighton: IDS.

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Patrick Caron, UNESCO	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K17A Prevent agriculture expansion into sensitive ecosystems so as to reduce global biodiversity loss</i>		
Description of the issue <i>in less than 5 lines</i>	<p>Over four decades, people across the globe have utilized biosphere reserves, designated under UNESCO's Man and the Biosphere (MAB) Programme, to explore local solutions to global challenges, including food production, thereby generating a wealth of experience and innovative potential for a sustainable future that emphasizes the conservation of biodiversity. I believe these environmental laboratories of best practices can contribute to innovative ways of looking at food security. For more information, please visit the site: <a href="http://www.unesco.org/new/en/naturalsciences/environment/ecological-sciences/man-and-biosphere-programme/">http://www.unesco.org/new/en/naturalsciences/environment/ecological-sciences/man-and-biosphere-programme/</a>. In addition, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) which sees both UNESCO and FAO as active founding members, is a global platform that can propose mechanisms and policy strategies for ensuring food security and conservation of biodiversity. For more information, you can consult the site: <a href="http://www.ipbes.net">http://www.ipbes.net</a></p>		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition			
<i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.			



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

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Main response proposed to address the issue	
Main actor(s) concerned or involved in the response proposed	

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)	
337. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point	Systemic issue
338. Breadth: Are there many people affected?	Few	Many

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

339. Scale: local/national/regional/global?	Local	National	Regional	Global
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
 Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

340. Impact on Availability	+
341. Impact on Access	+
342. Impact on Utilization/nutrition	++
343. Impact on Stability	+
344. Impact on most vulnerable people	+
345. Impact on women	+
346. Impact on children	+
347. Impact on marginalized populations	+
348. Cost to address the issue	Low Middle High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**6. Linkages with SDGs (1 to 17)<sup>29</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs.

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>29</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

References

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Patrick Caron, UNESCO	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K17B Increase agriculture resource efficiency through improved irrigation and water management.</i>		
Description of the issue <i>in less than 5 lines</i>	UNESCO's International Hydrological Programme (IHP), which is implementing its current phase on addressing responses to local, national and regional water security challenges, is devoted to protecting water resources and in providing solutions to national development programmes that link water, agriculture and food production. Last June, the CGIAR programme on Water, Land and Ecosystems and UNESCO-IHE (Institute for Water Education), which is based in Delft, the Netherlands, organized a roundtable to focus on placing sustainability at the heart of agricultural development, with the specific objective of identifying concrete gaps in our knowledge and potential solutions to ensure that the intensification of agriculture is contributing to sustainable and inclusive development. I believe UNESCO-IHE can play a major role in providing sustainable solutions to the issues of food security and nutrition. You can as well consult the website: <a href="https://www.unesco-ihe.org/">https://www.unesco-ihe.org/</a>		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>			

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

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Main response proposed to address the issue	
Main actor(s) concerned or involved in the response proposed	

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)	
349. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point	Systemic issue
350. Breadth: Are there many people affected?	Few	Many

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

351. Scale: local/national/regional/global?	Local	National	Regional	Global
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
352. Impact on Availability	+			
353. Impact on Access	+			
354. Impact on Utilization/nutrition	++			
355. Impact on Stability	+			
356. Impact on most vulnerable people	+			
357. Impact on women	+			
358. Impact on children	+			
359. Impact on marginalized populations	+			
360. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with SDGs (1 to 17)<sup>30</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs.

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>30</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

References



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Patrick Caron, UNESCO	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K17C Use of technology (biotechnology) for food security and nutrition		
Description of the issue <i>in less than 5 lines</i>	UNESCO has a neutral stance towards use of any technology to improve life systems and the point of biotechnology is one that needs to be taken on a case by case basis depending on national policies that promote or prohibit it. However, UNESCO supports scientific research in advancing biotechnology in agriculture and also in promoting ethics and regulatory norms in the application of such technology. UNESCO currently has two Category II centres providing training and undertaking research on Agricultural biotechnology in India and Nigeria. The Intergovernmental Bioethics Committee annual reports are a good resource to look at the regulatory and ethical strategies which are employed by countries to advance technology use in agriculture and food production.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>			

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	
Main actor(s) concerned or involved in the response proposed	

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
361. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
362. Breadth: Are there many people affected?	Few		Many	
363. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

364. Impact on Availability	+		
365. Impact on Access	+		
366. Impact on Utilization/nutrition	++		
367. Impact on Stability	+		
368. Impact on most vulnerable people	+		
369. Impact on women	+		
370. Impact on children	+		
371. Impact on marginalized populations	+		
372. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with SDGs (1 to 17)<sup>31</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs.

**7. The case being, linkages with any other issue****8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

References

<sup>31</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Patrick Caron, UNESCO	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K17D Improvement of policies to develop more efficient decisions regarding productivity and environmental stewardship</i>		
Description of the issue <i>in less than 5 lines</i>	UNESCO's programmes in science policy aim to understand how policy implementation can be enhanced through highlighting how each instrument in the chain from policy to impact can be dissected and diagnosed for more efficient policy implementation. The GO-SPIN programme is looking to identify these instruments that enhance or impede the implementation and impact of a given policy and it may be a useful exercise to carry out on why certain policies that promote food security are slow in implementation and how the problem can be diagnosed and solved.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>			

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	
Main actor(s) concerned or involved in the response proposed	

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
373. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
374. Breadth: Are there many people affected?	Few		Many	
375. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

376.	Impact on Availability	+		
377.	Impact on Access	+		
378.	Impact on Utilization/nutrition	++		
379.	Impact on Stability	+		
380.	Impact on most vulnerable people	+		
381.	Impact on women	+		
382.	Impact on children	+		
383.	Impact on marginalized populations	+		
384.	Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with SDGs (1 to 17)<sup>32</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs.

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

<sup>32</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

References



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Joint Research Centre of the European Commission		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International/European		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K18A Link between the food system and the energy systems across the entire food chain</i>		
Description of the issue <i>in less than 5 lines</i>	<p>Although we are finally moving towards a more systemic approach around FNS, we need to establish a much clearer link (and interaction) between food systems and other systems, most notably the energy system. Fossil fuels are a non-essential/non-critical input into the food system (including the entire chain), yet the food sector accounts for 30% of the world's total end-use of non-renewable energy, 70% of which is used beyond the farm (notably in transport, cooking, processing). If we are indeed set to move towards a system that is increasingly reliant on renewables as energy sources (given the negative environmental impacts of fossil fuel use and the risk of increasing resource scarcity), what does that kind of a transition entail and what kind of investments are needed today in order to set such a transition in motion across the entire food chain. How would this fundamentally alter the food system?</p> <p>Currently, we have a very poor understanding of how the extreme fluctuations in the availability and cost of energy (especially oil and natural gas) will affect the global food supply systems, and how they will be able to adapt to the decreasing availability of such energy sources.</p>		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition

*In less than 10 lines.* Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.

Since 2012, the FAO has started to do some work on Integrated Food-Energy Systems (IFES), but this approach has been very much focused on agricultural production, without taking a full food system view (notably how other sectors in the food chain that are highly dependent on non-renewable energy sources could benefit from a more integrated approach). A recent report by the Sustainability Institute on behalf of the United Kingdom Department for International Development, does make some attempt to indicate how energy systems are linked to the entire food supply chain (in the developing country context). This is an interesting start to researching this area, but much more needs to be done – including similar assessments for industrialised countries/regions, and taking into account future supply and demand trends in food and energy.

The current food system is in a state of lock-in when it comes to transitioning away from its over-reliance on non-renewable and costly energy. A system in a lock-in ultimately undermines its own existence by deteriorating the capacity to cope with upcoming crises of resource scarcity and environmental instability. Lock-ins can be undone through systems-thinking exercises which map the actors, activities, and outcomes of both the food system and of the current energy system, and then link the two to determine where the critical areas for change and transition are.

In an integrated Food-Energy-Water Nexus approach, the challenge is to provide sectoral analyses and, in a next step, to estimate the trade-offs among the system's sectors. The final objective is to promote at the same time food security, protection of water resources and freshwater ecosystems, and sufficient energy production. Such an approach should provide estimates of the economic costs and benefits under an optimization approach. This would allow to maximize the food production through the most efficient allocation of renewable and fossil resources.

This framework would provide the policy maker with instruments and quantitative information facilitating the maximization of integrated sectoral policies efficiency and effectiveness.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	<p>-- Definition of the Food Energy Water Nexus system (geographical, economic and social boundaries) based on the specific needs of each case-study.</p> <ul style="list-style-type: none"> <li>- Integrated approaches to greater energy efficiency, increased use of renewable energy and improved energy access across the ENTIRE food chain (and not only in production).</li> <li>- Integrated economic assessment approaches.</li> <li>- Estimation of food production and food security trends.</li> <li>- dialogue amongst all actors and stakeholders ensuring the direct involvement of local societies</li> <li>- legal and regulatory frameworks that favour the investment and development of renewable energy across the food chain, and minimise the subsidisation of and investments in fossil fuels</li> <li>- diversification in food production towards agroecology, but also in food supply chains away from longer supply chains</li> <li>-behavioural insights on how to shift behaviour and move beyond the lock-ins</li> </ul>
Main actor(s) concerned or involved in the response proposed	FAO, EEA, European Commission (i.e. JRC)

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			The analysis of the FNS, water, and energy issues under a Nexus approach would require to take into consideration both the endogenous and exogenous factors determining the characteristics of food chain.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X		X		
Nature of the main impact of the issue on FSN	X		X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

By 2050, global demand for energy is expected to nearly double, while water and food demand is set to increase by over 50% (IRENA).

Water availability and affordable and reliable energy are two key points to ensure food security in the Least Developing Countries, through increasing food productivity intensifying mechanization and expanding irrigation systems.

Food security (production, transport, cooking and processing of food) is highly dependent on energy (mainly fuel and electricity) and good quality water access (no access, water shortage, precipitation patterns change), and their respective costs. Moreover, there is the need of a systemic approach that takes into account the trade-offs among food production, energy production and availability/allocation of water resources. Maximizing the efficiency and output of this system can lead to food security, while preserving water resources and securing sustainable energy production.

This could be achieved through management practices, but it would also require investments in multipurpose water infrastructures aimed at enhancing renewable energy production and water management for irrigation.

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
385. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				<b>Systemic issue</b>
386. Breadth: Are there many people affected?				<b>Many</b>
387. Scale: local/national/regional/global?	Local	National	Regional	<b>Global</b>
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
388. Impact on Availability	--			
389. Impact on Access	--			
390. Impact on Utilization/ nutrition	--			
391. Impact on Stability	--			
392. Impact on most vulnerable people	--			
393. Impact on women	--			
394. Impact on children	--			
395. Impact on marginalized populations	--			
396. Cost to address the issue				<b>Medium-High</b>

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact		X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.		<b>Middle</b>	
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>33</sup>

Links to SDG 2.

Also links to SDG 7, 12, 13, 15 + 1, 6, and maybe 8

See especially: <http://www.stockholmresilience.org/research/research-news/2016-06-14-how-food-connects-all-the-sdgs.html>

On how food connects all the SDGs – and transitioning from a sectorial approach to the SDGs to one in which the social, economy and ecological aspects are seen as intersecting parts of a whole.

#### 7. The case being, linkages with any other issue

Water management – e.g. food-energy-water nexus

<sup>33</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

## 8. Additional Supporting Information

### *Additional information:*

Water Energy Nexus is a new field of research ,one of the literature review of concept ant tools is here:  
<http://dx.doi.org/10.1016/j.scitotenv.2016.09.046>

### *Evidence*

On diversification and agroecology, and lock-ins in the current food system:  
[http://www.ipes-food.org/images/Reports/UniformityToDiversity\\_FullReport.pdf](http://www.ipes-food.org/images/Reports/UniformityToDiversity_FullReport.pdf)

On food system lock-in see: <http://www.sciencedirect.com/science/article/pii/>

On risk in developing countries:  
[https://assets.publishing.service.gov.uk/media/57a0896e40f0b649740000a0/61478\\_EnergyFoodWaterNexus-SummaryforPolicyMakers.pdf](https://assets.publishing.service.gov.uk/media/57a0896e40f0b649740000a0/61478_EnergyFoodWaterNexus-SummaryforPolicyMakers.pdf)

See also: <http://www.resilience.org/stories/2005-04-01/why-our-food-so-dependent-oil>

On the challenges and opportunities of an integrated approach, see:  
<http://www.sciencedirect.com/science/article/pii/S2214241X1300014X>

### *Knowledge gaps*

- food and energy nexus across the food supply chain
- food and energy nexus in industrialized countries/regions and linkages to developing country contexts
- food and energy nexus considering future supply and demand trends
- food and energy nexus considering future environmental/climate trends

### *References*

FAO on IFES:

<http://www.fao.org/energy/78517/en/> and [www.fao.org/docrep/014/i2456e/i2456e00.pdf](http://www.fao.org/docrep/014/i2456e/i2456e00.pdf)

Sustainability Institute:

[https://assets.publishing.service.gov.uk/media/57a0896e40f0b649740000a0/61478\\_EnergyFoodWaterNexus-SummaryforPolicyMakers.pdf](https://assets.publishing.service.gov.uk/media/57a0896e40f0b649740000a0/61478_EnergyFoodWaterNexus-SummaryforPolicyMakers.pdf)



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Joint Research Centre of the European Commission		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	<u>Yes</u>		
Country of the responding individual/institution Please mention international or regional, the case being	International organisation		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K18B Food &amp; Nutrition Security assessment in urban areas</i>		
Description of the issue <i>in less than 5 lines</i>	Existing tools for Food & Nutrition Security assessment have been designed for rural areas while today urbanization is important, particularly in developing countries.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	X Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<p>Trend in urbanization and food insecure population in urban areas. Food market monitoring using variables expected to modify the supply and the demand sides. According to the African Development Bank, Sub Saharan Africa (SSA) has the lowest proportion of urban population (32.8%), but the highest proportion of slum dwellers (65%). Most SSA cities are characterized by insufficient basic infrastructure, particularly in low-income areas.</p> <p>Scientific literature show the vulnerability of urban areas to food and nutrition insecurity. Vulnerability is linked to the fact that urban poor very often rely exclusively on market for food access. Vulnerability is particularly strong when combined with very low purchasing power.</p> <p>Households that spend high proportions of their income on food have limited reserve for meeting their food needs when they encounter shocks, for example, when food prices rise (Maxwell &amp; Frankenberger, 1992).</p>		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	<ul style="list-style-type: none"> <li>- Design new tools that can assess objectively the urban areas;</li> <li>- Monitoring the factors expected to disturb the equilibrium Supply-Demand in urban areas</li> <li>- Assess new needs/changes in consumption trends for urban population.</li> </ul>
Main actor(s) concerned or involved in the response proposed	<ul style="list-style-type: none"> <li>- Researchers</li> <li>- Policy makers</li> <li>- Donors</li> </ul>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			<p>This issue may be considered as external due to the different external stressors on food markets (like international prices and its transmission to domestic markets).</p> <p>It can be as well internal to food system as urbanization is an internal phenomenon that implies new needs in terms of food and nutrition security, The urban population will develop other behavior due to their new environment (for example, they will prefer to eat more rice than cassava or other cereals due to the facility of cooking offered by rice!).</p>

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X			
Nature of the main impact of the issue on FSN	X				

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

Observation: The main nature of the issue is ECONOMIC as it is related to market. Urban people don't have a place to grow crops. So relying on food markets implies to face vulnerability to different market stressors (spikes in prices, food safety/diseases, etc...). In terms of impact, people with a low purchasing power will be the first to suffer from any increase in food prices. The accessibility component will be impacted even if food may be available on the local market.

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
397. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	X Critical point		Systemic issue	
398. Breadth: Are there many people affected?			X Many In a town like Nairobi, it has been reported that about 30% of urban population were food insecure (Kamau et al, 2011)	
399. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	X Regional <i>In sub Saharan Africa, exponential increase of pop. in urban areas (in 2015, Benin: 44% and Ivory Coast: 54%, source: WB Indicators)</i>	Global
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
400. Impact on Availability	(—)			
401. Impact on Access	(— —)			
402. Impact on Utilization/ nutrition	(— —)			
403. Impact on Stability	(—)			
404. Impact on most vulnerable people	(— —) Population with low salaries/low purchasing power			
405. Impact on women	(— —)			
406. Impact on children	(— —)			
407. Impact on marginalized populations	(— —) Specify as appropriate			
408. Cost to address the issue	Low	Middle	X High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X		
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

The issue is already there but has received to-date far too little attention from researchers and policy makers.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	X Middle	High
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#### 6. Linkages with SDGs (1 to 17)<sup>34</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

This issue should be linked to two SDGs (2 and 11):

Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Goal 11. Make cities inclusive, safe, resilient and sustainable

<sup>34</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## 7. The case being, linkages with any other issue

All issues related to food markets should be linked to this issue as well.

Unemployment rate,

Access to health infrastructure (like drinking water, toilet facilities, health, etc....). Most SSA cities are characterized by insufficient basic infrastructure, particularly in low-income areas. Only 20% of SSA's population has access to electricity, and in 2010, 3% and 53% to fixed-line and mobile phones, respectively; 84% of the continent's urban dwellers have access to potable water while 54% to sanitation (AfDB et al., 2012).

## 8. Additional Supporting Information

### *Additional information*

### *Evidence*

World bank Indicators: <http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS>

For others sources of evidence see the last section related to references.

### *Knowledge gaps*

Lack of specific tools for food and nutrition security assessment in urban areas

### *References*

- Kamau et al (2011). Food Security in Urban Households: An Analysis of the Prevalence and Depth of Hunger in Nairobi and its Relationship to Food Expenditure. Tegemeo Institute of Agricultural Policy and Development, Nairobi, Kenya.
- World Bank Indicator: <http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS> (visited on 24th October, 2016).
- UN, <http://www.un.org/sustainabledevelopment/cities/> ((visited on 24th October, 2016).
- Maxwell & Frankenberger (1992). Household food security: concepts, indicators, and measurements: a technical review. New York, NY, USA and Rome, UNICEF and IFAD.
- AfDB web site: <http://www.afdb.org/fr/blogs/afdb-championing-inclusive-growth-across-africa/post/urbanization-in-africa-10143/> (visited on 24th October, 2016).



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Joint Research Centre of the European Commission	
Do you answer on behalf of your institution, or as an individual?	On behalf	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being	International Organization	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K18C Implications of Agriculture Policies on FNS, rural exodus and out-migration. Issues on farm types and sizes in Developing Countries with focus on Sub-Sahara Africa</i>	
Description of the issue <i>in less than 5 lines</i>	Dynamic (semi) subsistence farming sector may be an asset to developing country societies. However, an emerging agricultural policy trend is replacing small-holders as the central actors of intervention in favour of larger commercial farms with sometimes less evident developmental benefits. From an FNS point of view, the first step is that of estimating whether large commercial operations are more productive than small-holders ones (with comparable support).	
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; flex-direction: column; align-items: center;"> <input type="checkbox"/> Challenge         </div> <div style="display: flex; flex-direction: column; align-items: center;"> <input checked="" type="checkbox"/> Opportunity         </div> </div>	It depends on a number of conditions including the following: (i) the specific economic and social framework of a given country/area; (ii) the concrete climate and agro-ecosystem; (iii) the success of diversification policies, exp. in industries (other-than-agriculture), and services; (iv) the effectiveness of social programmes

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<p>Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition</p> <p><i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</p>	<p>Comparative analysis of major performance indicators in different farm type/sizes, namely Large Holding, Commercial Farms, Small (semi-subsistence) farm-holders. Broad use of existing data sets at the country and areas levels.</p> <p>Broader development implications can be assessed at a later stage (land tenure, distribution effects, migration).</p>
<p>Main response proposed to address the issue</p>	<p>Agriculture policies in Developing Countries are expected to benefit from ad-hoc measures (instead of blanket approaches) favoring different types/size of farm-household depending on the concrete conditions in which producers operate.</p> <p>Policy measures need to rely on detailed farm-household level analysis to foster farm productivity via improved input and output mix, assuring higher/sustainable return in the various farm types/sizes.</p> <p>Following diagnostics, a supply chain approach might also be explored to foster the integration of both large and small-holders into a more coherent food supply network.</p>
<p>Main actor(s) concerned or involved in the response proposed</p>	<p>Small-holders; Agribusiness groups /unions; Prospective investors; Ministries (agriculture, infrastructure, trade); National Statistics agencies; Rural development NGOs; Donor and specialized technical aid agencies.</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			<p>Briefly mention how this may be the case:</p> <p><b>Internal:</b> Trade trends, food demand evolution (urbanization, food</p>

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			transition);... <b>External:</b> Land tenure trends; donor priorities; destabilizing factors (refugees);...
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(*)	<i><b>Economic (and productive)</b></i>	<i><b>Social (and Cultural)</b></i>	<i><b>Environment al (resources, etc.)</b></i>	<i><b>Governance (institutions, rights, etc.)</b></i>	<i><b>Other (SPECIFY)</b></i>
Main nature of the issue	Relative productivity of various farm types/size, e.g. small-holders compared to commercial larger farms	Distributional effects		An underlying factor affecting the developmental and distributional effect of a transition towards commercial and larger farms is linked to the question of (weak) land tenure.	
Nature of the main impact of the issue on FSN	-allocation of resources for FNS and development; -quality of nutrition	-new urban population born out of rural migration may not have enough income to ensure FNS			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Several Hundred Million small holder farmers in Developing Countries, especially in Sub-Saharan Africa, earn less than 3 equivalent a day (net salary or income from own production, depending if they are daily laborers or they farm their own plots). Expected salary in industrialized areas is for unskilled workers ~ 20-40 €/day. Development (agri-food) measures might need to target the reduction of the above gradient via increasing daily salary/income in Developing Countries (Sub-Saharan Africa), so to increase farm household resilience, as a prerequisite to regulate rural exodus and migrations.

### 3. Attributes of the Issue

	<i><b>Classification (**)</b></i>	
409. Depth: Is it relevant to food and	Critical point	Systemic issue



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nutrition systems as a whole, or to specific parts of those systems?				
410. Breadth: Are there many people affected?	Few			Many
411. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional SSA	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
412. Impact on Availability	(?)			
413. Impact on Access	(?)			
414. Impact on Utilization/ nutrition	(?)			
415. Impact on Stability	-			
416. Impact on most vulnerable people	0 (- for rural, + for urban)			
417. Impact on women	-			
418. Impact on children	-			
419. Impact on marginalized populations	(subsistence farmers)			
420. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

Timeframe (*)	Now/Short term (1-5 years)	Medium term (5-10 years)	Long term (10-20 years +)
Moment when the issue will have an impact	X	X	X (irreversible effects expected)
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**6. Linkages with SDGs (1 to 17)<sup>35</sup>**

SDG 2: [Direct link](#)

SDG 1: [Direct link](#)

**7. The case being, linkages with any other issue**

[To be developed further](#)

**8. Additional Supporting Information**

*Additional information*

[To be developed further](#)

*Evidence*

[To be developed further](#)

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<sup>35</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

To be developed further

*References*

To be developed further



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Joint Research Centre of the European Commission		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K18D Public policies and investments for food and nutrition security</i>		
Description of the issue <i>in less than 5 lines</i>	To identify and prioritise the more adequate policy and investment options to progress on the road of hunger eradication, in respect of other main development priorities of the country /region.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	The policy and investment options available to a given national government or region are finite. Several options are possible to reduce food insecurity and malnutrition according to the context, from increasing market efficiency and integration, developing safety nets, supporting the agricultural sector or improving infrastructure to name a few.		
Main response proposed to address the issue	Given the research and policy knowledge available and in the light of key country (and possibly regional) case studies, improve understanding of the policy and investment options possible and inquire the way of best prioritize or combine these options.		

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Main actor(s) concerned or involved in the response proposed

National governments  
Continental and sub-continental (regional) inter-governmental bodies

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Some policy options, e.g infrastructure development may out of the food system sensu stricto

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	XX	
Nature of the main impact of the issue on FSN	X	X	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
421. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
422. Breadth: Are there many people affected?				Many
423. Scale: local/national/regional/global?	Local	National	Regional	
		<i>If national government</i>	<i>If regional</i>	

For items 4-11 below, please use the classification [ — —, —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

424. Impact on Availability	+
425. Impact on Access	+
426. Impact on Utilization/ nutrition	+
427. Impact on Stability	+

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428.	Impact on most vulnerable people	+		
429.	Impact on women	+		
430.	Impact on children	+		
431.	Impact on marginalized populations	+		
432.	Cost to address the issue	Low	Middle	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

Talking about prioritization of policies, it is difficult to quantify the impact of the policies themselves. However, if the best policy options are selected the impacts on food security will be higher.

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low		
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

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**6. Linkages with SDGs (1 to 17)<sup>36</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG2

Links with SDGs 1,3,5,6,8,13,16

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

<sup>36</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Scheumann, Waltina Deutsches Institut für Entwicklungspolitik – German Development Institute, PhD		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Germany		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K19A Security of water-use rights along with land rights as key to food security		
Description of the issue <i>in less than 5 lines</i>	The Voluntary Guidelines have abstained from including water due to understandable reasons. However, given that farmers rely on secure use-rights to water aside of secure land rights, CFS should re-open the debate on water-use rights' issues, and start working on establishing effective water allocation regimes.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	This is all the more important in view of the ongoing activities of large-scale land acquisitions on the one hand, and pressure deriving from non-agricultural sectors on water resources in terms of quantity and quality on the other. It concerns intra- and inter-sectoral allocation of water resources, and providing water resources security for 'downstream' and public use(r)s.		
Main response proposed to address the issue	????		



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

FAO  
IWMI  
IFAD  
Multilateral development banks  
Bilateral 'donors'

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Internal because it is a key resource (input) in the agricultural production process. External because agricultural water use is challenged by increasing demand of other sectors

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X		X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
433. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
434. Breadth: Are there many people affected?				Many
435. Scale: local/national/regional/global?	Local	National	Regional	Global
	Areas with customary land tenure systems	Sub-Saharan African countries	SSA region	

For items 4-11 below, please use the classification [ — —, —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

436. Impact on Availability	Negative: investments relies on secure land and
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	water use rights		
437.	Impact on Access		
438.	Impact on Utilization/ nutrition		
439.	Impact on Stability		
440.	Impact on most vulnerable people	Negative/ very negative: if traditional use-rights are not respected / protected, and compensated	
441.	Impact on women	Very negative	
442.	Impact on children		
443.	Impact on marginalized populations	Most likely negative on subsistence and smallholders if not protected	
444.	Cost to address the issue		High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Challenge of creating a water-rights system and reform the land-cum-water

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X		
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with SDGs (1 to 17)<sup>37</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 2  
SDG 15

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>37</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

*References*

FAO on Water Tenure (2016)

FAO water administration (2001)

FAO on modern water rights (2006)

HED on Land and Water Rights (2006)

IWMI country studies (e.g. Tanzania)

academic research particularly on land-water rights in Sub-Sahara African countries

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Michael Brüntrup, Deutsches Institut für Entwicklungspolitik – German Development Institute, PhD		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Germany		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K19B Modernisation of food systems, rural transformation and food security</i>		
Description of the issue <i>in less than 5 lines</i>	(Major parts of) Food systems in many developing countries are in transition, driven by powerful forces. This has strong implications for agriculture and food value chains, for income and job opportunities of different “rural worlds”, and thus, for food security.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge x	Opportunity x	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	Analyse typical food value systems in countries along a “level of development” transect, by segmenting them into sub-systems according to level of effective regulation, technology, “rural worlds” involved, etc.. Subject these to future novel “stresses” like climate change, GHG mitigation and technology changes. Result is an assessment about conventional (along the development transect) and novel challenges and requirements for systemic changes.		
Main response proposed to address the issue	Comprehensive development of strategic producer-public-private partnerships at the national and regional levels.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

Agriculture, agro-industry, consumers, regulators, innovative industries (ICT, biotech)., as exemplified by the following international organisations:

FAO  
IFAD  
UNCTAD  
UNIDO  
UNEP

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			External because main drivers are out of agriculture: urbanization, food safety, social and environmental standards and regulations, climate change mitigation and adaptation needs.  Internal because response must be a transformation of the food systems.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	technical
Nature of the main impact of the issue on FSN	X		X	x	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
445. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
446. Breadth: Are there many people affected?				Many
447. Scale: local/national/regional/global?	Local	National	Regional	global
	x	x	x	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

448.	Impact on Availability	(-)		
449.	Impact on Access	(- -)		
450.	Impact on Utilization/ nutrition	(+)		
451.	Impact on Stability	?		
452.	Impact on most vulnerable people	(--)		
453.	Impact on women	(-)		
454.	Impact on children	?		
455.	Impact on marginalized populations	(0)		
456.	Cost to address the issue			High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

High standards and mitigation can reduce availability, drop out of smallholders form modern value chains reduces their incomes and economic access, modernization of processing can destroy low income jobs, Higher health standards likely improve nutrition

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

These modernization and transformation processes are ongoing and very long term, not very radical in the short term, and hardly ever come to an end. At present, several very strong trends come together particularly in poorer countries to form a strong case for massive guided transformation towards sustainable food systems.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low x	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Though transformation can be observed in the history of developed countries and comparing developing countries along the "level of development" transect, in combination with the novel trends many countries face unprecedented challenges to change their food systems now.

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**6. Linkages with SDGs (1 to 17)<sup>38</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 1, 2, 3, 5, 8, 9, 12, 13 14, 15, 17

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

- Historical transformation of agriculture and food systems with growing economic development
- Contribution of agriculture to climate change (up to 30%), and its high vulnerability (various FAO, WB and UNCCD reports)
- Health issues related to food systems reported by WHO, Global Nutrition Report
- Ecosystem service reports highlighting the major role of agriculture most biomes, and the strongly changing ecosystem pattern with modernization and transformation
-



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

How can transformation with several goals be steered (and not left to market forces and “accidental” technology development), which partnerships are needed, which incentive systems can be put in place?

*References*

World Development Report 2008

Global Nutrition Report 2016

FAO 2016, The agriculture sectors in the intended nationally determined contributions

Various documents of the 10 year programme on sustainable food systems (UNEP, FAO)

UNIDO value chain analysis and development

UNCCCCD literature on climate change and agriculture

Academic literature on food value chains, rural transformation, food standards and regulation, climate smart, sustainable..... agriculture,

K20A



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Oliver Willing, Zukunftsstiftung Landwirtschaft		
Do you answer on behalf of your institution, or as an individual?	<input checked="" type="checkbox"/> On behalf	<input type="checkbox"/> As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	<input checked="" type="checkbox"/> Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Germany		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	K20A Accessibility, Agrobiodiversity and Quality of Seed available to Peasants and Farmers		
Description of the issue <i>in less than 5 lines</i>	Consolidation in the seed industry and restrictions on seed exchange limit seed options for peasants and favor seed innovations focusing on high input farming systems, putting pressure on farmers' and governments' budgets and on the environment.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<input checked="" type="checkbox"/> Challenge	<input type="checkbox"/> Opportunity	<input type="checkbox"/> It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	To prepare this input, online and literature sources were researched. Additionally, stakeholders from development and/or farming NGOs and from the seed industry were consulted.		

Main response proposed to address the issue	<p>To confront or redress the risk of increasing seed monopolization and loss of agrobiodiversity, and to push innovation for sustainable, peasant-based farming systems, action on three different levels is essential:</p> <ol style="list-style-type: none"> <li>1) The rights of peasants and farmers to grow, share and sell seed on their land as put down in the International Treaty on Plant Genetic Resources in Food and Agriculture (ITPGRFA) need to be enforced at national, regional and global level, giving them clear priority over intellectual property right systems like patents or UPOV restrictions and mitigating eventual conflicts. Informal</li> </ol>
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	<p>seed exchange systems between peasants/farmers need to be strengthened and professionally encouraged and supported as important tools for driving participatory innovations in agriculture and as vital and speedy backup systems in crisis situations.</p> <p>2) Breeding initiatives that focus on agroecological systems like organic farming must be actively promoted and supported on national, regional and international level, with increased public funding for research and for the education of breeders and farmers concerning the participatory development of low input varieties and their optimized cultivation.</p> <p>3) In order to support the rapid implementation of sustainable breeding and farming systems, and to make breeding targeting peasant-based farming systems more attractive, the current system to re-finance the development of new varieties needs to be reformed. Patent or UPOV systems create barriers to informal seed exchange between farmers, thus blocking innovation and impeding food security.</p>
Main actor(s) concerned or involved in the response proposed	Governments, Seed Industry, NGOs

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			Because of mergers of seed companies with agrochemical companies, the issue of seed accessibility and quality is no longer driven by internal food system factors, but also by developments in other sectors. Briefly mention how this may be the case

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of		X	X	X	

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the issue					
Nature of the main impact of the issue on FSN	X		X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Seed issues are intrinsically linked to economic, cultural, and environmental aspects, that is why good governance that provides opportunities for breeders without limiting farmers' choice, innovation at the farm level or agrobiodiversity is so crucial.

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
457. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		X Systemic issue	
458. Breadth: Are there many people affected?	Few		X Many	
459. Scale: local/national/regional/global?	Local	National	Regional	X Global
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

460. Impact on Availability	— —		
461. Impact on Access	— —		
462. Impact on Utilization/ nutrition	— —		
463. Impact on Stability	— —		
464. Impact on most vulnerable people	— — Specify as appropriate		
465. Impact on women			
466. Impact on children	— —		
467. Impact on marginalized populations	— — Specify as appropriate		
468. Cost to address the issue	Low	X Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Seed availability, variety, and quality are the cornerstones of food systems. Any short or long term limitations on seed accessibility and variety will result in severe consequences in the quantity and quality of food available to the population, and in the long term sustainability of farming systems.

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#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Decreasing seed variety with resulting loss of food diversity aggravating instances of malnutrition is already happening. Breeding is a long-term process, so the full impact of decreased seed accessibility and quality will be felt in the future, which is why speedy and mid-term action is needed.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	X Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

For decades, international seed policy and research has focused on quantity and high-input systems, neglecting sustainability, nutritional quality, and the vital role of agrobiodiversity. There still is a lot of scientific and traditional knowledge on more diverse / resilient systems, but more research is needed.

#### 6. Linkages with SDGs (1 to 17)<sup>39</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Most relevant SDG:

2 (Zero Hunger), specifically targets 2.3, 2.4, and 2.5

Links to other SDG:

3 (Health & Well-being),  
12 (Responsible Production),  
15 (Life on Land)  
13 (Climate Action)  
6 (Clean Water)

<sup>39</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**7. The case being, linkages with any other issue**

- 1) UN-Convention on Biodiversity (CBD), including Nagoya Protocol on Access and Benefit Sharing
- 2) International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)

**8. Additional Supporting Information***Additional information*

Consolidation in the global seed industry is a well-documented issue (see Ref. 1). According to a variety of sources, more than 50 % of global seed supply is concentrated in the hands of just 6 companies (as of Oct 2016), with two of these companies having agreed to a merger, and another one being acquired by a global player in the Chemistry industry sector.

Bigger suppliers tend to focus on bigger markets which in the case of the breeding industry results in focusing on species and varieties that can be distributed globally. Today's global commodities production is based on only 12 crops that are grown and marketed globally without regard to agroecosystem compatibility or nutritional value. Breeding activities concerning other crops are neglected, even though these crops may be highly relevant at the local, national or even regional level, and may have beneficial effects on nutritional quality and diversity.

Starting in the 20<sup>th</sup> century, many traditional breeding companies were acquired by manufacturers of agricultural inputs like fertilizers or pesticides, with profound consequences for their breeding programmes. Seed is increasingly developed and distributed as part of “packages” or “systems” with seed, fertilizer and pesticide components, culminating in the development of herbicide-tolerant, genetically engineered plants. On the other hand, breeding for low input or organic farming systems that still form the backbone of global food production, has largely been neglected by the global players.

Breeding is a long-term process requiring a well-trained workforce. To re-finance the development of new varieties, the seed industry has pushed for ever tighter laws on intellectual property rights as put down in the UPOV 91 standards. At the same time, seed companies increasingly tend to use patents for protection of their innovations. Because seed laws are sometimes difficult to enforce, seed companies have concentrated their research activities away from open-pollinated varieties to hybrid seeds that can be used for one growing season only.

In combination, these developments reduce the availability and accessibility of seed especially for small farmers and peasants who do not have the financial resources to buy hybrid seeds and the inputs necessary. Fines on “illegal” sharing of seeds among peasants in UPOV 91-based national seed laws only tend to aggravate the situation by withdrawing vital financial resources from those most in need.

There is a growing international consensus that input-driven agricultural systems will not be able to secure food production and food quality sustainably in the long run. While some inputs like components for synthetic fertilizers are increasingly running scarce, others like pesticides have severe consequences on agrarian ecosystems, reducing long-term productivity and human health. As the IAASTD has put it in 2008: “business as usual is not an option” (see Ref. 2). Moreover, an input-driven agricultural system requires functioning market infrastructures at all levels in order to realize its full potential. In many regions still afflicted by hunger or malnutrition, inputs like fertilizers are either too

costly or not available at all. Some governments try to confront this issue by subsidizing agricultural inputs, apparently with limited success at high cost (see Ref. 4).

More sustainable and agroecological farming systems like organic farming require not only know-how at the farm level, but also seeds and propagating material suited to agroecological practices. Given their current portfolio structure with heavy emphasis on fertilizer and/or pesticide production, it is highly unlikely that the necessary transformation of the industry will be pushed by the global seed giants. As in the cases of renewable energies or (auto-)mobility, innovation in breeding are being driven by small, more flexible players, whose successes then motivate global market leaders to follow suite.

Starting ca. 30 years ago, organic breeding initiatives have been established in many countries both in the global North and South, often with a specific emphasis on improving food and nutrition security and quality. These initiatives develop resilient varieties that do not need costly external inputs to grow, but are adapted to sustainable farming systems that not only provide a range of high-quality food, but also increase soil fertility, resilience to drought or flooding, and reduce carbon content in the atmosphere by fixing carbon in organic matter. Today, organic breeding initiatives are at the forefront in the development of heterogenous lines that combine a variety of qualities, e. g. incorporating drought resistant varieties with varieties able to grow in flooded environments. Moreover, organic breeders create non-hybrid varieties that can be re-sown after harvest, thus allowing for on site selection and adaptation by farmers and reducing dependency on the availability of external seed supplies – an aspect that can be vital in situations where the supply of “fresh” seed is disrupted by regional conflict, natural disasters or economic crises.

#### *Evidence*

See references and above.

#### *Knowledge gaps*

While most of the aspects of the issue of seed accessibility and quality can be addressed by changes in current seed and research policies, there is a need to develop new systems of remuneration for breeders to encourage innovation in neglected crops and open-pollinated varieties. Bureaucratic systems based on individual licencing do not even work in industrialized agricultural systems, let alone in peasant-based farming systems. New approaches like open-source licencing (“copyleft”) and new ways of financing are needed to push the development of non-restricted, sustainability-orientated seeds that are the cornerstone of an agricultural system providing better food and nutrition for everyone on this planet.

As mentioned before, agricultural research has for decades concentrated almost exclusively on breeding and growing high-input hybrid varieties in industrialized agricultural systems, so there is a need to boost research on more sustainable breeding and production systems targeted for peasants and small and subsistence farming environments typical for most regions afflicted by hunger and malnutrition.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

- 1) Philipp A. Howard: Seed Industry Structure 1996-2013  
(<https://msu.edu/~howardp/seedindustry.html>)
- 2) IAASTD  
([http://www.unep.org/dewa/agassessment/reports/IAASTD/EN/Agriculture%20at%20a%20Crossroads\\_Synthesis%20Report%20\(English\).pdf](http://www.unep.org/dewa/agassessment/reports/IAASTD/EN/Agriculture%20at%20a%20Crossroads_Synthesis%20Report%20(English).pdf))
- 3) Right to Food and Nutrition Watch 8/2016 (<http://www.righttofoodandnutrition.org/watch-2016>)
- 4) Fearon et al.: Fertilizer Subsidy Programme in Ghana: Evidence of Performance after Six Years of Implementation (<http://kurzlink.de/GCSIHgjSY>)





## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Gro-Ingunn Hemre and Livar Frøyland ; National Institute of Nutrition and Seafood Research (NIFES)		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Norway		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K21A Novel feed sources for a multidisciplinary integrative food production on land and sea ensuring food and nutrition security		
Description of the issue <i>in less than 5 lines</i>	To increase the availability of nutrient rich seafood including sustainable utilization of lower trophic levels from the oceans and development of resilient and sustainable feed for farmed animals on land and sea.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge X	Opportunity X	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	Establish programs for proper management of not-yet-exploited wild resources (catches) from the oceans. An example here may be the FAO, Nansen program. Ideally should world stocks at several trophic levels be monitored to secure sustainable catches based on proper science and management. The HLPE 7th report on fisheries indicates that increases in seafood consumption will depend on sustainable increases in aquaculture. This will be possible only if this development follows the SDGs. Programs to secure sustainable aquaculture can be harmonized with goals to reduce food waste; e.g. utilization of food waste to grow insects, which then can reduce the dependence on fish meal (FM). Insects are shown to be a well balanced amino-acid source readily utilized by the fish. Lowered FM use for aquaculture will make more high-nutritious fish available for direct human consumption.		

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Main response proposed to address the issue	Monitoring programs at national levels should implement lower trophic levels in the oceans, screen these for nutrients and undesirables, to enlighten the possibility to utilize these resources in a sustainable manner. Scientific councils should emphasize the urgent need for new knowledge on alternatives to both fishmeal and plant-proteins, so that future aquaculture feed does not compete with human food. Legislations to secure use of these resources should be prioritized.
Main actor(s) concerned or involved in the response proposed	Science, governments, food and health authorities, at national and international levels. FAO Committee on Fisheries (COFI), UNIDO, CFS (and HLPE), ICES (and other similar organs).

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					Secure that Nutrition is in focus in FSN
Nature of the main impact of the issue on FSN					Secure nutrients to avoid deficiency

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Globally we struggle to secure sufficient critical nutrients for a healthy life, fish is a rich source for the poor, so it is critical that fish can be made available in larger quantities.

## 3. Attributes of the Issue

	Classification (**)	
469. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point	Systemic issue
470. Breadth: Are there many people affected?	Few	Many - yes

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471. Scale: local/national/regional/global?	Local	National	Regional	Global issue
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
472. Impact on Availability	++			
473. Impact on Access				
474. Impact on Utilization/ nutrition	++			
475. Impact on Stability				
476. Impact on most vulnerable people	++ will secure nutrients that is today resulting in deficiency challenges. ++			
477. Impact on women	++			
478. Impact on children	++			
479. Impact on marginalized populations	++, yes specially where fish availability is low. ++			
480. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	++	++	++
Moment to act to address the issue	++	++	++

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	++	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**6. Linkages with SDGs (1 to 17)<sup>40</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 2 and 4

**7. The case being, linkages with any other issue**

Food safety and human health by addressing the impact of seafood on nutritional status and in relation to combat “hidden hunger”

**8. Additional Supporting Information***Additional information*

Fish is critically important to FSN (Beveridge et al. 2013, Allison et al. 2013, Bene et al. 2015). Fish unique nutritional properties make it essential to the health of billions of consumers in both developed and developing countries. Seafood support the need for several essential micronutrients e.g. iodine, vitamin D, marine fatty acids (EPA/DHA), and high-quality animal protein, all being nutrients essential for e.g. normal development, learning ability, brain development and more. Therefore, we underline the importance of fish when discussing FSN, in compliance with SDG2 and SDG14. Seafood has a large potential in combating deficiency of important micronutrients, safe and nutritious seafood will be a crucial commodity to hinder “hidden-hunger”.

Several reports indicate that fish-stocks are to a large extent exploited to the maximum (Worm et al. 2009). Other possibilities from the ocean must be investigated as the ocean covers 70% of our surface globally, and has enormous possibilities. To be able to reach SDG2, and SDG14, already utilized fish stocks must be under strict management based on knowledge / science (Murawski, 2010), and we must urgently investigate the opportunity that lays in going to lower trophic levels.

Fish demand has been rising globally at more than 2.5% annually since 1950. Use of fish to feed the fish (reduction) in aquaculture, is decreasing, but still around 16 mill tonnes are used for FM and FO, most of these fish have a potential as direct human food (Bene et al. 2015). Successful alternatives that is not competing with human food can be e.g. insects, shown as a good alternative to FM in studies with salmon, trout and tilapia (Tran et al. 2015). Aquaculture increases at a high rate annually HLPE (2014). Further, fish species that demand low feed input, e.g. cyprinids, has great potential to increase in an affordable sustainable manner (FAO 2014; Seafish 2016). It will be critical that increases in aquaculture follows SDG14; production should be climate friendly, sustainable, and avoid reduction (fish to feed fish).

To secure FSN, aquaculture is an opportunity, and a challenge. Fish production emit low levels of greenhouse gasses, however, they need high quality protein leading to reduction if fish (FM) are used to feed fish. The potential here is to find alternative protein sources (Bene et al., 2015), e.g. insects

<sup>40</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

that can feed on waste, transforming carbohydrates to high quality proteins (van Huis, 2013). Projects ensuring new sustainable resources, and in addition help reducing waste, are critical to support to combat undernutrition, and can help sustainable development of aquaculture world-wide.

#### Evidence

Seafood provides a major source of high biological value proteins, long chain omega-3 fatty acids and micronutrients. In 2013, fish accounted for about 17% of the global population's intake of animal protein and 6.7% of all protein consumed (SOFIA 2016).

#### *Knowledge gaps*

How to efficient catch, or farm fish sustainably with low FM use (we are on our way), in a sustainable manner, so that resources are exploited but not over-exploited. How to find new food and feed resources from the ocean, and manage these sustainably. How to secure food safety and nutrition by proper food chains.

#### References

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Ms. Stineke Oenema, Coordinator, UN System Standing Committee on Nutrition (UNSCN)</b>		
Do you answer on behalf of your institution, or as an individual?	On behalf	<del>As individual</del>	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	<del>No</del>	
Country of the responding individual/institution Please mention international or regional, the case being	Global		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K22A Climate and nutrition security and increased resilience of food systems, mitigating greenhouse gas emissions</i>		
Description of the issue <i>in less than 5 lines</i>	Addressing climate change on the one hand, and improving food security and nutrition on the other, are closely interlinked issues. Climate change affects food and nutrition security and undernutrition in turn undermines the resilience to shocks and the coping mechanisms, reducing the capacities to resist and adapt to climate change consequences. Dietary patterns on the other hand are also drivers of climate change.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	<del>It depends (please specify)</del>
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Written inventory among the experts of UNSCN members followed by a telephone exchange.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	Nutrition and health stakeholders need to be engaged in key climate change adaptation and mitigation initiatives. Improved multi-sectoral coordination and political will is required to integrate nutrition-sensitive actions into climate-resilient sustainable development efforts in the UNFCCC work and in the post 2015 development agenda. And vice versa, climate can benefit from dietary changes that are beneficial for health outcomes and for climate outcomes.
Main actor(s) concerned or involved in the response proposed	Governments, international organizations, private sector, farmers, research and academia, consumers

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X	X	Climate is an external driver of food security, however dietary patterns are part of the food systems and also drive climate change

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Climate has impacts on production (and vice versa), environment and on health/nutrition (social). Therefore since it is crosscutting several sectors. Including several stakeholders, extra attention should be given to governance

## 3. Attributes of the Issue

	Classification (**)	
481. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point	Systemic issue
482. Breadth: Are there many people	Few	Many

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affected?				
483. Scale: local/national/regional/global?	<del>Local</del> <i>Indicate here the precise location</i>	<del>National</del> <i>Indicate here the precise country</i>	<del>Regional</del> <i>Indicate here the precise region</i>	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
484. Impact on Availability	— —			
485. Impact on Access	— —			
486. Impact on Utilization/ nutrition	—			
487. Impact on Stability	— —			
488. Impact on most vulnerable people	Specify as appropriate: vulnerable people are those mostly affected by climate change – undernutrition reduce resilience to shocks and coping strategies. Better climate and nutrition security and increased resilience of food systems will thus immediately improve the conditions of most vulnerable groups.			
489. Impact on women	— —			
490. Impact on children	— —			
491. Impact on marginalized populations	Specify as appropriate: improved resilience to climate change shocks will improve the conditions of marginalized people increasing their possibilities to access to services and resources.			
492. Cost to address the issue	<del>Low</del>	<del>Middle</del>	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			<b>X</b>
Moment to act to address the issue	<b>X</b>		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:



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## 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 6. Linkages with SDGs (1 to 17)<sup>41</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**Goal 13.** Take urgent action to combat climate change and its impacts

**Goal 11.** Make cities and human settlements inclusive, safe, resilient and sustainable

- **11.b** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

**Goal 15.** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

## 7. The case being, linkages with any other issue

Agriculture as an important driver of climate change. Direct GHG emissions from agriculture include methane (CH<sub>4</sub>) emissions from flooded rice fields and livestock, nitrous oxide (N<sub>2</sub>O) emissions from the use of organic and inorganic nitrogen fertilizers, and carbon dioxide (CO<sub>2</sub>) emissions from loss of soil organic carbon in croplands as a result of agricultural practices and in pastures as a result of increased grazing intensity. Agriculture also causes emissions that are accounted for in other sectors (industry, transport, and energy supply, etc.), from production of fertilizers, herbicides, pesticides, and from energy consumption for tillage, irrigation, fertilization, harvest, and transport.

## 8. Additional Supporting Information

*Additional information*

Forthcoming discussion paper by UNSCN on nutrition and climate change.

HLPE on Food security and climate change (2012)

<sup>41</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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#### *Evidence*

Evidence on the impact of climate change on nutrition and on how adaptation, mitigation and reduction of GHG emissions can be found in the HLPE Report on Food security and climate change of 2012.

#### *Knowledge gaps*

Data and information systems:

- Nutrition impact of agriculture, food systems and food security policies
- What are threshold indicators to define a nutrition emergency (either in a “stable” situation and a “non-stable” situation (such as natural hazards).

#### *References*

HLPE, Nutrition and Food Systems Report (2017)

FAO, The State of Food and Agriculture 2016 (SOFA): Climate change, agriculture and food security

HLPE, *Food security and climate change* (2012)

Thomson, M.; Fanzo, J. (2015), *Climate change and nutrition*. In Global Nutrition Report 2015: Actions and accountability to advance nutrition and sustainable development. Chapter 6. Pp. 74-84. Washington, DC: International Food Policy Research Institute (IFPRI).  
<http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/129450>

UNSCN News 38 on *Climate Change: Food and Nutrition Security Implications*.

[http://www.unscn.org/en/publications/scn\\_news/](http://www.unscn.org/en/publications/scn_news/)

UNSCN, 2010, *Climate Change and Nutrition Security Policy Brief*

[http://www.unscn.org/files/Statements/Bdef\\_NutCC\\_2311\\_final.pdf](http://www.unscn.org/files/Statements/Bdef_NutCC_2311_final.pdf)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	<b>Ms. Stineke Oenema, Coordinator, UN System Standing Committee on Nutrition (UNSCN)</b>		
Do you answer on behalf of your institution, or as an individual?	On behalf	<del>As individual</del>	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	<del>No</del>	
Country of the responding individual/institution Please mention international or regional, the case being	Global		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K22B Developing enabling food environments, including PPP's</i>		
Description of the issue <i>in less than 5 lines</i>	In achieving the SDGs multi-stakeholder partnerships are expected to play an increasingly relevant role, as fully recognized in SDG 17. Partnerships are important vehicles for mobilizing and sharing experiences, technology, knowledge, and resources to successfully implement the SDGs, especially in relation to food security and nutrition and sustainable agriculture.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<del>Challenge</del>	Opportunity	<del>It depends (please specify)</del>
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Written inventory among the experts of UNSCN members followed by a telephone exchange.		

Main response proposed to address the issue	
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Main actor(s) concerned or involved in the response proposed

Governments, private sector, civil society, farmers, producers, international organizations, relevant ministries, research and academia

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			X

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X			X	
Nature of the main impact of the issue on FSN	X			X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
493. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue
494. Breadth: Are there many people affected?	Few			Many
495. Scale: local/national/regional/global?	Local	National	Regional	Global
	From local to global - It depends on the scale of the PPP			

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

496. Impact on Availability	+ or —
497. Impact on Access	++ or — —
498. Impact on Utilization/ nutrition	+ or —
499. Impact on Stability	++ or — —
500. Impact on most vulnerable people	PPP can have both negative and positive impacts on

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	the four dimensions of food security and on vulnerable and marginalized people – it depends on how PPP function, it can be positive for one group of people and negative for another at the same time		
501. Impact on women	+ or —		
502. Impact on children	+ or —		
503. Impact on marginalized populations	Specify as appropriate		
504. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		X	
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

So far very little evidence available – see Global Nutrition Report 2015.

#### 6. Linkages with SDGs (1 to 17)<sup>42</sup>

<sup>42</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

**Goal 17** “Strengthen the means of implementation and revitalise the global partnership for sustainable development”

**Goal 2.** End hunger, achieve food security and improved nutrition and promote sustainable agriculture

#### **7. The case being, linkages with any other issue**

Value chains.

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

no systemic and comparative exercise in drawing lessons from the variety of multi-sectoral partnerships that are (or have been) operational in connection to FSN.

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Ms. Stineke Oenema, Coordinator, UN System Standing Committee on Nutrition (UNSCN)</b>		
Do you answer on behalf of your institution, or as an individual?	On behalf	<del>As individual</del>	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	<del>No</del>	
Country of the responding individual/institution Please mention international or regional, the case being	Global		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K22C Food safety, food processing, food distribution and bioavailability of nutrients: nutrition-sensitive value chains.</i>		
Description of the issue <i>in less than 5 lines</i>	Food security is not only a matter of calories intake but it is also important the quality of the food that we eat. This issue should be addressed through the whole value chain, from farm to fork, including all the actors involved.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	<del>Challenge</del>	Opportunity	It depends (please specify)
	For example food processing can be an opportunity if we consider adding nutrients or value to food but it can also lead to less nutritional value (i.e. ultra-processed food)		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Written inventory among the experts of UNSCN members followed by a telephone exchange.		

Main response proposed to address the issue	Value chain approach and systemic approach. We need to look at all the dimensions of the food system and implement actions at all levels of the value chain. In order to be successful, we need a multistakeholder approach: all involved actors should participate in improving food safety (farmers, producers, markets, policy makers, all involved institutions – ministries of health, agriculture, civil
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	society, private sector)
Main actor(s) concerned or involved in the response proposed	farmers, producers, markets, policy makers, all involved institutions – ministries of health, agriculture, civil society, private sector, research and academia, foundations, international organizations

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		X	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X				
Nature of the main impact of the issue on FSN					HEALTH

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
505. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
506. Breadth: Are there many people affected?	Few		Many	
507. Scale: local/national/regional/global?	Local	National	Regional	Global



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For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

508. Impact on Availability	+		
509. Impact on Access	+		
510. Impact on Utilization/ nutrition	++ / - -		
511. Impact on Stability	+		
512. Impact on most vulnerable people	Specify as appropriate		
513. Impact on women	++ / - -		
514. Impact on children	++ / - -		
515. Impact on marginalized populations	Specify as appropriate		
516. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Regulations could cost money, but not all steps to improve value chains are very expensive so it depends.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

So far the evidence has starting to emerge about nutrition-sensitive value chains but we need to deepen the knowledge and understanding of this issue.

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## 6. Linkages with SDGs (1 to 17)<sup>43</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**Goal 2.** End hunger, achieve food security and improved nutrition and promote sustainable agriculture

**Goal 3.** Ensure healthy lives and promote well-being for all at all ages

## 7. The case being, linkages with any other issue

Food losses and waste

## 8. Additional Supporting Information

*Additional information*

*Evidence*

*Knowledge gaps*

Data and information systems:

- Information systems to monitor diets and nutrient gaps, as well as availability and access to nutritious food in markets and through own production, including indigenous crops

Healthy food systems

*References*

UNSCN, *Discussion Paper 2 - Investments for a Healthy Food System*, September 2016

[http://www.unscn.org/files/ICN2\\_TPM/EN\\_final\\_Investments\\_for\\_Healthy\\_Food\\_Systems\\_UNSCN.pdf](http://www.unscn.org/files/ICN2_TPM/EN_final_Investments_for_Healthy_Food_Systems_UNSCN.pdf)

<sup>43</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	<b>Ms. Stineke Oenema, Coordinator, UN System Standing Committee on Nutrition (UNSCN)</b>		
Do you answer on behalf of your institution, or as an individual?	On behalf	<del>As individual</del>	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	<del>No</del>	
Country of the responding individual/institution Please mention international or regional, the case being	Global		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K22D Nutrition, food systems and health systems</i>		
Description of the issue <i>in less than 5 lines</i>	Enhance policy coherence among food systems and health systems to improve nutrition - Are agriculture and food system goals aligned with public health goals – if yes, how and if not, what is needed to enhance coherence of policies? Building on the findings of the 2017 HLPE report on Nutrition and Food systems and move beyond food systems to link with health systems.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<del>Challenge</del>	Opportunity	<del>It depends (please specify)</del>
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Written inventory among the experts of UNSCN members followed by a telephone exchange.		
Main response proposed to address the issue	We need a more holistic picture using a “system approach” (agriculture system, food system, health system) that leads to transformational change as is pledged for in the 2030 Agenda.		

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Main actor(s) concerned or involved in the response proposed

Governments, agriculture and health ministries, international organizations and institutions (ex: WHO, FAO), private sector, civil society, research/academia.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue		X		X	
Nature of the main impact of the issue on FSN		X ( since it is health)		X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
517. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
518. Breadth: Are there many people affected?	Few		Many	
519. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
520. Impact on Availability	+			
521. Impact on Access	0			
522. Impact on Utilization/ nutrition	++			
523. Impact on Stability	++			

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

524. Impact on most vulnerable people	Specify as appropriate: more coherence among food systems and health systems will contribute to better address specific needs of vulnerable people		
525. Impact on women	++		
526. Impact on children	++		
527. Impact on marginalized populations	Specify as appropriate		
528. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>44</sup>

<sup>44</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**Goal 2.** End hunger, achieve food security and improved nutrition and promote sustainable agriculture

**Goal 3.** Ensure healthy lives and promote well-being for all at all ages

- 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and wellbeing

## 7. The case being, linkages with any other issue

## 8. Additional Supporting Information

### *Additional information*

“The links between public health, water system and food system are evident. A healthy, sustainable food system is one that accounts for the public health impacts across the entire lifecycle of how food is produced, processed, packaged, labeled, distributed, marketed, consumed and disposed. The health sector takes the responsibility to emphasize, support and ensure physical and mental health of all farmers and consumers, especially women. Water, sanitation and hygiene can decrease infectious disease burden and access to safe water and improved sanitation explains 35% of the variation in stunting rates across countries and time periods” (Smith and Haddad, 2014).

### *Evidence*

### *Knowledge gaps*

No integrated approach – each system is still working in silos

### Data gaps:

- Information systems to monitor diets and nutrients gaps, as well as availability and access to nutritious foods in markets and through own production, including indigenous crops.
- Food environment and indicators capturing availability, affordability, convenience and desirability

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

HLPE Report on Nutrition and Food systems (2017)

Fanzo, J., *Strengthening the engagement of food and health systems to improve nutrition security: Synthesis and overview of approaches to address malnutrition*. Global Food Security (2014)

CGIAR Research Program on Agriculture for Nutrition and Health (A4NH) - <http://a4nh.cgiar.org/>

Pinstrup-Andersen, P., "*The food system and its interaction with human health and nutrition*", 2020 Conference Brief, IFPRI (2011) - <http://www.ifpri.org/publication/food-system-and-its-interaction-human-health-and-nutrition>

Global Panel on Agriculture and Food Systems for Nutrition, *Food systems and diets: Facing the challenges of the 21st century*, 2016.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	<b>Ms. Stineke Oenema, Coordinator, UN System Standing Committee on Nutrition (UNSCN)</b>		
Do you answer on behalf of your institution, or as an individual?	On behalf	<del>As individual</del>	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	<del>No</del>	
Country of the responding individual/institution Please mention international or regional, the case being	Global		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K22E Migration and nutrition</i>		
Description of the issue <i>in less than 5 lines</i>	Migration can influence nutrition through a number of channels. Remittances may have a positive and direct income effect on food consumption and the use of nutrition services. Migration may also impact the allocation of household labor to both productive and reproductive activities. Migration is likely to affect also nutritional habits back home through exposure to different diets and health practices in destination countries.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	<del>It depends (please specify)</del>
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Written inventory among the experts of UNSCN members followed by a telephone exchange.		

Main response proposed to address the issue	
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Main actor(s) concerned or involved in the response proposed	Governments, civil society, international organizations, international governing bodies
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*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	X			
Nature of the main impact of the issue on FSN	X	x	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
529. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
530. Breadth: Are there many people affected?	Few		Many	
531. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country		
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
532. Impact on Availability	0			
533. Impact on Access	- -			
534. Impact on Utilization/ nutrition	- -			
535. Impact on Stability	- -			

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536. Impact on most vulnerable people	Specify as appropriate		
537. Impact on women	- -		
538. Impact on children	- -		
539. Impact on marginalized populations	Specify as appropriate		
540. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

People will continue to migrate also because of other issues such as climate change, and we should continue monitoring this.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>45</sup>

<sup>45</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**Goal 16.** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

**Goal 8.** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

**Goal 2.** End hunger, achieve food security and improved nutrition and promote sustainable agriculture

#### **7. The case being, linkages with any other issue**

Issue of refugees and conflicts (protracted crises).

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

Data and information systems:

- Food environment and indicators capturing availability, affordability, convenience and desirability
- What are threshold indicators to define a nutrition emergency either in a “stable situation” and a “non-stable” situation (refugees, conflict, natural hazards)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

#### *References*

Jayatissa R, Wickramage K. *What Effect Does International Migration Have on the Nutritional Status and Child Care Practices of Children Left Behind?* Tchounwou PB, ed. *International Journal of Environmental Research and Public Health*. 2016;13(2):218.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4772238/>

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A. Zezza, C. Carletto, B. Davis, P. Winters, *Assessing the impact of migration on food and nutrition security*, in *Food Policy*, Volume 36, Issue 1, February 2011.

<http://www.sciencedirect.com/science/article/pii/S0306919210001193>

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Ms. Stineke Oenema, Coordinator, UN System Standing Committee on Nutrition (UNSCN)</b>		
Do you answer on behalf of your institution, or as an individual?	On behalf	<del>As individual</del>	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	<del>No</del>	
Country of the responding individual/institution Please mention international or regional, the case being	Global		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K22F Rural transformation, urbanization and nutrition</i>		
Description of the issue <i>in less than 5 lines</i>	Rural transformation and urbanization present specific challenges and opportunities to achieve food security and nutrition: the scale of the demand and the demands creation is changing because of urbanization as well as lifestyles and both are contributing to nutrition transformation and all its challenges.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<del>Challenge</del>	<del>Opportunity</del>	It depends (please specify)
	Employment/unemployment, food safety, demand creation, innovation, slums, food deserts		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Written inventory among the experts of UNSCN members followed by a telephone exchange.		

Main response proposed to address the issue	Cross-sectoral and multi-stakeholder collaboration to address the main challenges related to rural-urban dynamics: <ul style="list-style-type: none"> <li>• rural-urban linkages</li> <li>• Milan food pact</li> <li>• urban planning</li> </ul>
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

Civil society, private sector, governments (national and local), academia, international organizations

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
541. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
542. Breadth: Are there many people affected?	Few		Many	
543. Scale: local/national/regional/global?	Local	National	Regional	Global
	Everywhere in the world	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
544. Impact on Availability	++/ — — (urban deserts)			
545. Impact on Access	++/ — —			
546. Impact on Utilization/ nutrition	++/ — —			
547. Impact on Stability	++/ — —			

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548. Impact on most vulnerable people	Specify as appropriate: Vulnerable people are often living in marginalized rural areas, slums or periurban areas. Actions to address the issues related to rural urban dynamics will thus primarily affect those living in these critical areas		
549. Impact on women	+		
550. Impact on children	+		
551. Impact on marginalized populations	Specify as appropriate: actions should also address the issue of connecting marginalized people with services and markets		
552. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

We should check the demographic trends to see if this issue will be there in the long term

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>46</sup>

<sup>46</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**Goal 11.** Make cities and human settlements inclusive, safe, resilient and sustainable

**Goal 6.** Ensure availability and sustainable management of water and sanitation for all

**Goal 2.** End hunger, achieve food security and improved nutrition and promote sustainable agriculture

#### **7. The case being, linkages with any other issue**

Food losses and waste  
Food safety  
Migration  
Nutrition-sensitive value chains

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

Country case studies presented during the CFS43 Plenary session “Forum on urbanization, rural transformation and implications for food security and nutrition” – Mali, Switzerland, city of San Paolo (Brazil), Colombia.

*Knowledge gaps*

Data and information systems: no data on how these transformations are affecting FSN

- Nutrition impact of agriculture, food system and food security policies
- Food environment and indicators capturing availability, affordability, convenience and desirability
- Data on food losses and waste



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

#### *References*

CFS43 background document - "Forum on urbanization, rural transformation and implications for food security and nutrition", October 2016 - <http://www.fao.org/3/a-mr205e.pdf>

UN Habitat, *HABITAT III - New Urban Agenda*, October 2016

<https://www2.habitat3.org/bitcache/97ced11dcecef85d41f74043195e5472836f6291?vid=588897&disposition=inline&op=view>

UNSCN, *UNSCN statement on nutrition security of urban populations*.

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International Food Policy Research Institute (IFPRI), 2015. *Global Nutrition Report 2015: Actions and Accountability to Advance Nutrition and Sustainable Development*. Chapter 7

Global Forum on Food Security and Nutrition (FSN Forum), 2016. *Summary of the online consultation on the background document to the CFS Forum on Urbanization, Rural Transformation and Implications for Food Security*. <http://www.fao.org/3/a-bl630e.pdf>

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Ms. Stineke Oenema, Coordinator, UN System Standing Committee on Nutrition (UNSCN)</b>		
Do you answer on behalf of your institution, or as an individual?	On behalf	<del>As individual</del>	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	<del>No</del>	
Country of the responding individual/institution Please mention international or regional, the case being	Global		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K22G Nutrition, food systems and social protection</i>		
Description of the issue <i>in less than 5 lines</i>	Social protection programs can be applied to several areas of the food systems – production (e.g. input subsidies), labour (public works programmes), trade (food price subsidies, grain reserve management), and transfers (school feeding, supplementary feeding, cash transfers) – and contribute to improve the nutritional status of malnourished people.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<input checked="" type="checkbox"/> Challenge	<input type="checkbox"/> Opportunity	<del>It depends (please specify)</del>
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Written inventory among the experts of UNSCN members followed by a telephone exchange.		

Main response proposed to address the issue	A strategic approach and a coherent package of interventions is needed in implementing social protection mechanisms through the whole food system. Also important is to build policy linkages from social protection to other sectors – agriculture, education, health, nutrition – and to institutionalize social protection within government systems. Social protection programs should be inclusive in order to respect Agenda 2030 principle of “no one is left behind”.
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

Governments (national and local), civil society organizations, international organizations, research and academia

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		X	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue		X		X	
Nature of the main impact of the issue on FSN	X			X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
553. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
554. Breadth: Are there many people affected?	Few		Many	
555. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>In many cases National governments are in charge</i>	Regional <i>Indicate here the precise region</i>	Global

For items 4-11 below, please use the classification [ — —, —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

556. Impact on Availability	+
557. Impact on Access	++
558. Impact on Utilization/ nutrition	++

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559. Impact on Stability	++
560. Impact on most vulnerable people	Specify as appropriate: social protection programs specifically address most vulnerable people
561. Impact on women	++
562. Impact on children	++
563. Impact on marginalized populations	Specify as appropriate: Social protection can improve access to services and resources that marginalized people might lack
564. Cost to address the issue	Low Middle High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

We need systemic change in order to create food systems that provide all people with healthy food but there will always be people who will need a certain level of social protection (i.e. elderly, people with disability, etc.)

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There are quite a few examples of social protection individual schemes or programs but they have not being brought together in one global overview.

#### 6. Linkages with SDGs (1 to 17)<sup>47</sup>

<sup>47</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**Goal 10.** Reduce inequality within and among countries

- **10.4:** Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality

**Goal 8.** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

**Goal 16.** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

## 7. The case being, linkages with any other issue

Resilient food systems ( see ODI “*Social protection and resilient food systems - a synthesis*” <https://www.odi.org/publications/7907-social-protection-instruments-resilient-food-security> )

## 8. Additional Supporting Information

*Additional information*

*Evidence*

Country case study: Brazil (Zero Hunger Program; Bolsa Familia; National System and Policy for Food and Nutrition Security; National School Meal Programme (PNAE) – among others)

Examples of conditional cash transfers

School feeding programs

*Knowledge gaps*

Social protection programs to reduce overweight, obesity and NCDs.

Data gaps:

- Need for disaggregated data to reflect the conditions of marginalized and excluded people
- Nutrition impact of agriculture, food system and food security policies (see also UNSCN Paper “*Impact Assessment of Policies to support Healthy Food Environments and Healthy Diets*”, 2016)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

HLPE 2012, *Social protection for food security*.

FAO, *The State of Food and Agriculture 2015: Social protection and agriculture: breaking the cycle of rural poverty*, 2015.

SUN, *Scaling Up Nutrition In Practice, Issue 4: The Contribution of Agriculture and Social Protection to Improving Nutrition*, 2015

FAO, *Nutrition and Social Protection*, 2015 - <http://www.fao.org/3/a-i4819e.pdf>



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Ms. Stineke Oenema, Coordinator, UN System Standing Committee on Nutrition (UNSCN)</b>		
Do you answer on behalf of your institution, or as an individual?	On behalf	<del>As an individual</del>	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	<del>No</del>	
Country of the responding individual/institution Please mention international or regional, the case being	Global		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K22H Nutrition and trade and markets approaches.</i>		
Description of the issue <i>in less than 5 lines</i>	Trade policy can support nutrition action when it has objectives and outcomes coherent with the intended outcomes of nutrition action. It would be interesting to identify also which is the role and purpose of agriculture subsidies in relation to trade and nutrition.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<del>Challenge</del>	<del>Opportunity</del>	It depends (please specify)
	In theory trade can support nutrition objectives for example by promoting economic growth, enhance incomes, provide a more stable supply of products and services and ensure that healthy food are available on markets while reducing the prices of consumer goods. In practice, trade policies can also introduce risks like for example, making it easier for people to access and afford unhealthy food.		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Written inventory among the experts of UNSCN members followed by a telephone exchange.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

Main response proposed to address the issue	<p>The suggested response is to enable and motivate policy coherence between trade policy and nutrition action through:</p> <ul style="list-style-type: none"> <li>- Better analysis of the coherence between trade and nutrition is needed (enhance common understanding).</li> <li>- Stronger institutional capacities and greater coordination</li> <li>- Better governance mechanisms</li> <li>- Right people at the table</li> </ul>
Main actor(s) concerned or involved in the response proposed	Governments, trade and health ministries (not often at the table), international organizations and institutions (WTO, OECD, WB), international donors, civil society, research/academia

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?	<b>X</b>	<b>X</b>	External driver in the case of trade policies

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	<b>X</b>			<b>X</b>	
Nature of the main impact of the issue on FSN	<b>X</b>				

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	<i>Classification (**)</i>			
565. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	<i>Critical point</i>		Systemic issue	
566. Breadth: Are there many people affected?	<i>Few</i>		Many	
567. Scale: local/national/regional/global?	Local	National	Regional	Global



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

568. Impact on Availability	++
569. Impact on Access	++
570. Impact on Utilization/ nutrition	+ or —
571. Impact on Stability	+
572. Impact on most vulnerable people	Specify as appropriate: lower prices can positively affect vulnerable people's access to food
573. Impact on women	0
574. Impact on children	0
575. Impact on marginalized populations	Specify as appropriate: better trade policies can succeed in reaching marginalized populations
576. Cost to address the issue	Low Middle High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact		X	
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

See UNSCN papers “Enhancing Coherence between Trade Policy and Nutrition Action” and “Nutrition Impact Assessment Tool”

## 6. Linkages with SDGs (1 to 17)<sup>48</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**Goal 2:** End hunger, achieve food security and improved nutrition and promote sustainable agriculture

- Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round (target 2b)
- Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility (target 2c)

**Goal 8:** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

- Increase Aid for Trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade- Related Technical Assistance to Least Developed Countries (target 8a)

**Goal 10:** Reduce inequality within and among countries

- Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements (target 10a)

**Goal 14:** Conserve and sustainably use the oceans, seas and marine resources for sustainable development

- By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation (target 14,6)

**Goal 17:** Strengthen the means of implementation and revitalize the global partnership for sustainable development

- Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda (target 17.10)
- Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020 (target 17.11)
- Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access (target 17.12)

<sup>48</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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## **7. The case being, linkages with any other issue**

Value chain

Markets

## **8. Additional Supporting Information**

### *Additional information*

### *Evidence*

Evidence at the national level shows that policies that liberalize trade tend to increase the overall amount of food traded and available food in deficit countries (Porkka et al, 2003; Brooks and Matthews et al, 2005).

Evidence from emergency situations shows that more trade can help moving basic staples into areas affected (del Ninno and Dorosh, 2001).

### *Knowledge gaps*

There are no tools to analyze the degree of alignment between the objectives and outcomes of trade policy and nutrition action.

### Data gaps:

- Information systems to monitor diets and nutrients gaps, as well as availability and access to nutritious foods in markets and through own production, including indigenous crops.
- Food environment and indicators capturing availability, affordability, convenience and desirability.

### *References*

Díaz-Bonilla, Eugenio; and Hepburn, Jonathon (2016). *Trade, Food Security, and the 2030 Agenda*. Geneva: International Centre for Trade and Sustainable Development (ICTSD). Available at: <http://www.ictsd.org/themes/global-economic-governance/research/trade-food-security-and-the-2030-agenda>

UNSCN, *Discussion Paper 1 - Enhancing Coherence between Trade Policy and Nutrition Action*, 2015 Available at: [http://www.unscn.org/files/ICN2\\_TPM/UNSCN\\_Discussion\\_Paper\\_1\\_Trade\\_and\\_Nutrition\\_2015rev\\_en.pdf](http://www.unscn.org/files/ICN2_TPM/UNSCN_Discussion_Paper_1_Trade_and_Nutrition_2015rev_en.pdf)

De Schutter, O. *International Trade in Agriculture and the Right to Food*. Friedrich-Ebert-Stiftung (FES). Dialogue on Globalization Occasional Paper No 46. Geneva: Friedrich-Ebert-Stiftung, 2009. Available at: <http://library.fes.de/pdf-files/bueros/genf/06819.pdf>

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Baker, P., Kay, A., & Walls, H. (2015). *Strengthening Trade and Health Governance Capacities to Address Non-Communicable Diseases in Asia: Challenges and Ways Forward*. Asia & the Pacific Policy Studies, 2(2), 310-323.

Hawkes C, Blouin C, Henson S, Drager N, Dubé L (editors). *Trade, Food, Diet and Health: Perspectives and Policy Options*. Oxford: Wiley Blackwell, 2010.

Brooks, J. and A. Matthews (2015), *Trade Dimensions of Food Security*, OECD Food, Agriculture and Fisheries Papers, No. 77, OECD Publishing. <http://dx.doi.org/10.1787/5js65xn790nv-en>

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Juan Fernández Labbé. The Latin American Center for Rural Development-Rimisp.	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being	Chile. Rimisp is a regional (Latin America) applied research institution on Rural Development	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K23A FSN policies must be linked to climate change mitigation and adaptation strategies.		
Description of the issue <i>in less than 5 lines</i>	Food production for greater access and benefit to the rural poor can be promoted through environmentally sustainable systems, where family farming has significant value.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Reviewing FNS policy application through FNS projects, and evaluating specific FNS projects in many countries (El Salvador, Ecuador and others), and applied research on the field.		
Main response proposed to address the issue	In some areas of LAC, the greater availability of food has been sought through the growth of agribusiness, with negative effects on the environment as well as high cost access. Family farming supposes an environmentally sustainable production and with beneficial prices in the short circuits, which also energize the local economies.		

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Main actor(s) concerned or involved in the response proposed

Rimisp; National and regional policy dialogue platforms on rural development issues (Rural Dialogue Groups, Regional Advocacy Groups); Ministries of Agriculture of the countries; Ministries of Environment of the countries; International cooperation agencies (IFAD, FAO, IICA, OXFAM, among others).

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X	X	It deals with policy/project design and with specific territorial and even family conditions, which include interactions with the national and local food system

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
577. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
578. Breadth: Are there many people affected?	Few		Many	
579. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	El Salvador, Ecuador, and others	LAC	
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
580. Impact on Availability	+			
581. Impact on Access	++			

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582.	Impact on Utilization/ nutrition	
583.	Impact on Stability	++
584.	Impact on most vulnerable people	Small producers in lagging territories are most affected by the effects of climate change.
585.	Impact on women	+
586.	Impact on children	+
587.	Impact on marginalized populations	There are about 35 million people facing hunger in LAC and undernutrition is above 11% in the continent (2015).
588.	Cost to address the issue	Low Middle High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>49</sup>

<sup>49</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 1: No Poverty

SDG 2: End hunger

SDG 10: Reduced Inequalities

#### **7. The case being, linkages with any other issue**

Rural income generation. Poverty alleviation. Agricultura familiar. Mitigación y adaptación al cambio climático. Articulación de políticas.

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*



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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	German Escobar. The Latin American Center for Rural Development-Rimisp.	
Do you answer on behalf of your institution, or as an individual?	x	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	x	No
Country of the responding individual/institution Please mention international or regional, the case being	Colombia. Rimisp is a regional (Latin America) applied research institution on Rural Development	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K23B In rural Latin America, FSN policy is often top-down designed. It frequently ignores access to food and concentrates on food availability.</i>		
Description of the issue <i>in less than 5 lines</i>	Policy on FSN tends to translate in field projects devoted to producing selected agricultural/animal products for direct family consumption. Most often these programs are input-supported by FNS projects, which reduces sustainability in the long run. In most cases, no income generating activities are included.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge X	Opportunity X	This is both a challenge and an opportunity
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Reviewing FNS policy application through FNS projects, and evaluating specific FNS projects in Colombia.		

Main response proposed to address the issue	Both policy and project design require a bottom-up process. Conditions on particular territories where projects will be applied must be considered when designing field project activities.
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Main actor(s) concerned or involved in the response proposed

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	x	x	It deals with policy/project design and with specific territorial and even family conditions, which include interactions with the national and local food system

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	x		x	
Nature of the main impact of the issue on FSN	x	x			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
589. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			x
590. Breadth: Are there many people affected?	Few			x
591. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	LAC	

For items 4-11 below, please use the classification [ — —, —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

592. Impact on Availability	-
593. Impact on Access	--

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594.	Impact on Utilization/ nutrition	0		
595.	Impact on Stability	-		
596.	Impact on most vulnerable people	-	on Rural poor	
597.	Impact on women	-		
598.	Impact on children	--		
599.	Impact on marginalized populations	There are about 35 million people facing hunger in LAC and undernutrition is above 11% in the continent (2015).		
600.	Cost to address the issue	Low	x	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	x	x	
Moment to act to address the issue	x		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	<b>HIGH</b>
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with SDGs (1 to 17)<sup>50</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**7. The case being, linkages with any other issue**

Rural income generation. Poverty alleviation. Future generation development.

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

<sup>50</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Rimisp – Latin American Center for Rural Development, Chiara Cazzuffi		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Chile. Rimisp is a Latin American applied research institution on rural and territorial development		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K23C Spatial inequality in food consumption within developing countries</i>		
Description of the issue <i>in less than 5 lines</i>	Households in the most prosperous areas of developing countries have an average consumption almost 75% higher than that of similar households in the lagging areas of these countries		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Literature review and descriptive data analysis		
Main response proposed to address the issue	<ul style="list-style-type: none"> <li>- Generate new knowledge and deeper understanding of how the poor access food in poor places, which food they access, whether this differs by gender, and how the transformation in food systems can be made more inclusive both up- and down-stream (i.e. producers and consumers).</li> <li>- Use the new knowledge to inform food security policies.</li> </ul>		

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Main actor(s) concerned or involved in the response proposed

Scientific communities  
National governments  
Local governments

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		x	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	x	x	x	
Nature of the main impact of the issue on FSN	x	x			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)
601. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Systemic issue
602. Breadth: Are there many people affected?	Many
603. Scale: local/national/regional/global?	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)	
604. Impact on Availability	-
605. Impact on Access	--
606. Impact on Utilization/ nutrition	--
607. Impact on Stability	-
608. Impact on most vulnerable people	-- poor people in poor places

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609. Impact on women	--
610. Impact on children	--
611. Impact on marginalized populations	-- urban and rural poor
612. Cost to address the issue	Middle

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low		
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There is very little in the literature, and almost nothing in the design of food and nutritional security policies, on how the poor access food in poor places, which food they access, and how food system transformation can be used to promote inclusive development and food security for poorer people and marginalized groups.

#### 6. Linkages with SDGs (1 to 17)<sup>51</sup>

<sup>51</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
 SDG 2: Zero Hunger and SDG 3: Good Health and Well-being  
 Links with:  
 SDG 1: No Poverty  
 SDG 10: Reduced Inequalities

### **7. The case being, linkages with any other issue**

Urbanization, change in diets, and the rapid agri-food transformation. The ongoing transformation of agrifood systems and value chains includes the 'supermarket revolution' in retail, which started in the larger cities and over time diffused to small and medium cities (SMC); and a "quiet revolution" driven by small and medium entrepreneurs in midstream segments of value chain, such as wholesale, processing, logistics, services to retail and farm sector.

### **8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

Berdegúe J. A. and Proctor F. J. with Cazzuffi C., 2014. Inclusive Rural–Urban Linkages. Working Paper Series N° 123. Working Group: Development with Territorial Cohesion. Territorial Cohesion for Development Program. Rimisp, Santiago, Chile.





## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Wenche Barth Eide and Nanna Lien, Department of Nutrition, Faculty of Medicine, University of Oslo</b>		
Do you answer on behalf of your institution, or as an individual?	<input checked="" type="checkbox"/> On behalf	<input type="checkbox"/> As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Country of the responding individual/institution Please mention international or regional, the case being	Norway		

#### 1. Overview of the issue

<b>Issue in 2 lines</b>	<i>K24A Defining corporate respect for human rights in fighting growing obesity and associated NCDs.</i>		
Description of the issue <i>in less than 5 lines</i>	New opportunities emerging through the UN Guiding Principles on Business & Human Rights to define and promote state obligations to <i>protect</i> , and corporate responsibility to <i>respect</i> the human rights to adequate livelihoods, FS and diet-related health.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<input type="checkbox"/> Challenge	<input type="checkbox"/> Opportunity	<input type="checkbox"/> It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	The overwhelming documentation and observations of increasing obesity and associated NCDs worldwide, point to exploring how the 2011 <i>UN Guiding Principles for Business &amp; Human Rights</i> and the 2015 <i>UNGP Reporting Framework</i> can be operationalized to promote responsibility by food- and other relevant industry to respect international human rights. This could help avoid harmful impacts on livelihoods, food security, and diet-related health generated by some business operations and relations.		

Main response proposed to address the issue	Promote communication, understanding and analytical collaboration between food security and public health nutrition expertise and experience (academic, professionals/civil servants, NGOs) and legal and other expertise on human rights (especially business and human rights); the purpose being to define realistic standards against which companies may assess potential harmful human rights impact (undertake HR <i>due diligence</i> ) and
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	publicly report on findings and any intentions of change in practice.
Main actor(s) concerned or involved in the response proposed	The highly interdisciplinary character of the joint understanding needed, calls for innovative learning and research programmes by responsible universities and other research/higher learning institutions, and bolder systematic exchange between the now largely disconnected intellectual knowledge bases and governance structures concerned. Systematic encounters and constructive interaction in education and research between food security and nutrition experts and practitioners and legal/human rights experts must be encouraged, drawing also on the currently evolving dialogue and exchange on business and human rights in the UN.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	n.a.	n.a.	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	x	x	x	Political; educational
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

A human rights based approach (HRBA) to food security and nutrition needs to start from the level/nature of the issues at hand, which could be rooted in any of the issue areas under the typology outlined here (more on p.8.)

## 3. Attributes of the Issue

	Classification (**)	
613. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems? BOTH	X Critical point	X Systemic issue
614. Breadth: Are there many people affected?	Few	X Many

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615. Scale: local/national/regional/global? Attributes at different levels: impact level (Local/individual); international human rights law (Global); human rights obligations of states to protect (National), responsibilities of food companies and enterprises to respect human rights (Transnational/National)	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++) <b>n.a.</b>				

616. Impact on Availability	<b>General for this table: human rights based analyses demand different designs, see further why in box below.</b>		
617. Impact on Access			
618. Impact on Utilization/ nutrition			
619. Impact on Stability			
620. Impact on most vulnerable people	Specify as appropriate		
621. Impact on women			
622. Impact on children			
623. Impact on marginalized populations	Specify as appropriate		
624. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
The listing mixes elements of a certain *human right* (to adequate food), and *rights-holders* (various groups), with no room for *duty-bearers* in human rights terms or other *responsible actors* (industries), crucial for understanding who's accountable for causing (potential) harmful impact (on obesity/NCD).

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue	soonest	to continue	continuing

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
The period for arriving at (1) consensus on applying human rights based approach to food security and nutrition issues, and (2) evidence of impact from using it, would vary greatly according to context and nature of the knowledge, governance, legislative and political environments concerned.

#### 5. Degree of confidence

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

Solidity of currently available knowledge base.

X Low

Middle

High

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Two critical knowledge bases: public health nutrition (as related to livelihood food chain/ marketing/ consumption) and legal international human rights generally, and especially business and human rights, are seldom linked in higher education or research calls, and thus tend to remain in disparate “worlds”.

## 6. Linkages with SDGs (1 to 17)<sup>52</sup>

[First indicate the most relevant SDG and, the case being, links existing with other SDGs]

Growing obesity and the associated increase in NCDs globally are related most directly to Goals 2 and 3 but more indirectly to several others as has been analysed i.a. in the Global Nutrition Report 2016, Finding 3, which concludes that at least 12 of the 17 SDGs contain indicators that are highly relevant for nutrition, reflecting nutrition’s central role in sustainable development.

We do not enter further into this here, but focus on the essence of our specific emerging issue which encompasses the element of *corporate respect for human rights*, and how this is related to the SDG.

A good articulation of linking SDG and business is made by the Shift Project, most recently in a paper issued November 2016: “Business, Human Rights and The Sustainable Development Goals. Forging a Coherent Vision and Strategy”, which says i.a.:

*The Sustainable Development Goals (SDGs) present an opportunity not just to update our vision of the role of business in sustainable development, but to change it fundamentally.*

*There is no more pressing or more powerful way for business to accelerate social development than by driving respect for human rights across their value chains. The proposition that all companies not only can contribute at scale to development through these networks of business relationships, but that they have a responsibility to do so, is the quiet revolution that sits at the heart of the UN Guiding Principles on Business and Human Rights.*

.....

*Companies’ single greatest opportunity to contribute to human development lies in advancing respect for the human rights of workers and communities touched by their value chains....Where companies are involved with harms to people’s human rights, whether through their operations or value chains, their business is increasingly exposed to risks as well. In fact, severe risks to human rights have today arguably become a leading indicator of risks to business, and can incur real costs.”*

Such an understanding justifies the urge to also look at business’ role in generating obesogenic environments, to be further specified according to context wherever obesity and NCDs are prevalent and/or on the rise.

## 7. The case being, linkages with any other issue

<sup>52</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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Economic globalisation and the associated transformation in agriculture with increasing urbanisation and changes in lifestyles have led to the widely researched and reported nutrition transition, and the fact that more people, including the poorest, are becoming exposed to processed, sometimes ultra-processed unhealthy food products. Our “critical issue” suggests that the food industry play an important role in these negative trends, and proposes the use of the emerging attention to businesses’ responsibility to respect human rights, as a new entry to define and link potential positively adjusted business behaviour to improvement in the nutritional value of food products and the way they are marketed, especially to children.

## 8. Additional Supporting Information

### *Additional information*

The Shift Project, consisting of much of the same people that were behind the development of the UN Guiding Principles for Business and Human Rights launched by the UN Human Rights Council in 2011, prepared in 2015 a UNGP Reporting Framework aimed to help corporations understand how they can define the most “salient” human rights that risk being violated through their specific business operations and relations, including in their supply chains. Much has already been articulated regarding respect of children’s right not to work, requirements to workers’ rights to decent working conditions, and risks of harmful impact on the environment of certain activities in a company’s production or extraction chain. Much less attention has yet been given to the need for more evidence of harmful effects of corporate behaviour on livelihoods/food security and diet-related health and nutrition conditions. The CFS and HLPE can change this by recognizing the responsibility of governments and the international community to address these issues systematically, and for the private sector to increase their understanding of what respect for human rights will imply in light of their their respective situations and business models. Academics and NGOs should be encouraged to bring about better evidence and analyses of the role of businesses in contributing to “obesogenic” environments and thereby help to identify governments’ obligations to protect (through regulations) people’s rights to adequate food and diet-related nutritional health, and also help define companies’ responsibility to respect these rights by reducing the risk of harmful impact of their practices.

### *Evidence*

The concept is here used in terms of evidence of emerging processes in and out of the UN that can help to frame activities in food security and nutrition circles to address the obesity/NCD concerns from a perspective of business and human rights. The UN Guiding Principles on Business and Human Rights are getting increasing attention among food businesses as documented through reports by e.g. the Shift Project and by the Danish Institute for Human Rights through its Business and Human Rights Department, and through reports from some food-related businesses themselves, e.g. Nestlé and Unilever to mention two early respondents. Another evidence lies in the annual UN Forum on Business and Human Rights in Geneva, which at its fifth edition in November 2016 had more than 2500 participants and with a percentage of business attendance having risen from very low the first year (2012) to 24% this year. The Forum tends to have stimulated a new and more constructive climate for dialogue between governments, the corporate sector and many civil society organisations, and more research, information and exchange should be encouraged in light of the UN Guiding Principles and UNGP Reporting Framework on how the risk to food security and nutrition by negative commercial practices, can impact on both communicable and non-communicable diseases.

### *Knowledge gaps*

The critical knowledge gaps are threefold: Firstly, the lack of knowledge within food security/nutrition circles generally about the opportunities of using what a human rights based framework/approaches might offer in fighting malnutrition including overweight/obesity and related NCDs. Secondly, the lack of understanding among human rights advocates and practitioners that “technical” issues along the food chain from production to consumption can be important human rights issues (e.g. lowering HFSS or reducing marketing pressure on children). And thirdly, the amalgamation of the two sets of knowledge are only in its infancy and should be given opportunities to be developed further and translated into professional and popular understanding of rights and duties in meeting claims for sustainable food

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availability, stable access to food, and opportunities for enjoying healthy diets; this should be combined with identification of appropriate mechanisms for holding responsible actors accountable where these claims are not met.

*References/Sources (selected)*

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WHO/EURO 2016: Tackling food marketing to children in a digital world: trans-disciplinary perspectives. Children's rights, evidence of impact, methodological challenges, regulatory options.  
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UNICEF, November 2016: Advertising & Marketing to Children Global Report

UNICEF, November 2016: Review of current labelling regulations and practices for food and beverage targeting children and adolescents in Latin America countries (Mexico, Chile, Costa Rica and Argentina) and recommendations for facilitating consumer information.

UN Guiding Principles for Business and Human Rights, UN Human Rights Council, 2011

[http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR\\_EN.pdf](http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf)

UNGP Reporting Framework, Shift and Mazars 2015

<http://www.ungpreporting.org/>

Various documentation by Shift of early business responses to UNGP and the UNGP Reporting Framework

See: <http://www.shiftproject.org/>

Various documentation from the Danish Institute for Human Rights, through their Business and Human Rights Programme (experience from working i.a. with Nestlé)

<http://www.humanrights.dk/business-human-rights>

*(Further updated references and resources in the area of business and human rights can be provided!)*



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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Rose Fiamohe, Africa Rice Center (AfricaRice), Calavi Research Station, Cotonou, Benin		
Do you answer on behalf of your institution, or as an individual?	Institution		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Benin, International institution		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K25A Heavy reliance on rice imports in sub-Saharan Africa (SSA)		
Description of the issue <i>in less than 5 lines</i>	SSA countries continue to depend on rice imports to meet the increasing gap between supply (rice production) and demand. Such heavy reliance on imports can severely affect food security and political stability as demonstrated during the 2007–2008 food crisis		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	Both
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Micro and macro-economic analysis, policy analysis, domestic rice competitiveness in terms of production, quality, demand analysis, consumer preference, analysis of the willingness to pay for upgraded quality rice, price transmission between rice supply and demand and market analysis were used to identify the issue and assess and its importance for FSN.		

Main response proposed to address the issue	AfricaRice has elaborated and is implementing its 2011-2020 Strategic Plan for rice sector development. The target is to improve rice production, processing and marketing performance to significantly reduce dependency on rice imports and attain rice self-sufficiency in SSA. This strategy is being implemented through the Global Rice Science Partnership, the Rice Task Force mechanism and a network of Rice Sector Development Hubs that have been set up across Africa to concentrate Research & Development efforts and connect partners along the rice value chain. In all of this, there is strong collaboration with
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	the National Agricultural Research Systems (NARS) with a particular focus on youth and women.
Main actor(s) concerned or involved in the response proposed	AfricaRice and its financial partners (the African Development Bank, Food and Agriculture Organization of the United Nations, World Bank, Japan International Cooperation Agency (JICA), Japan International Research Center for Agricultural Sciences (JIRCAS), National Agricultural Research Systems, rice value chain actors (farmers, processors, traders, inputs suppliers, financial institutions), local community authorities, private sectors actors, Governments, Universities and NGOs,

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			This is the case due to the fact that rice imports are mainly induced by the low level of national, regional or continental production but also by free trade, agricultural support and protection policies implemented by the major rice exporters and importer countries

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

- The primary nature of the issue and its impact is economic and productive. Indeed, theoretically, imports should be determined by the national supply and demand. Moreover, governments spend a lot of money to import rice and it is well known in economic theory that it negatively affects the country's production, regional production as well as trade balance.
- The issue is also cultural because anecdotal evidence suggests that urban preference for rice is due to bias in favor of imports in cities closer to ports and the favorability toward locally produced rice in cities closer to rice production zones and in particular, closer to the primary and secondary centers of origin and of cultural heritage, where African rice was domesticated.



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### 3. Attributes of the Issue

	<b>Classification (**)</b>			
625. Depth: Is it relevant to food and nutrition systems as a whole or to specific parts of Food and Nutrition systems?	Critical point			Systemic issue
626. Breadth: Are there many people affected?	Few			Many
627. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Sub Saharan Africa</i>	Global
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
628. Impact on Availability	+			
629. Impact on Access	0			
630. Impact on Utilization/ nutrition	+			
631. Impact on Stability	-			
632. Impact on most vulnerable people	— Vulnerable people often live in rural areas where locally produced rice is the most consumed. Imported rice is not only competing with domestic production, but also with its quality and price			
633. Impact on women	0			
634. Impact on children	0			
635. Impact on marginalized populations	— Poor quality imported rice available at lower price on the market affects the health of marginalized people			
636. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Eliminating rice imports is a big challenge which needs a set of strong, relevant and effective policy actions. These will lead to strong and smart investments in whole agribusinesses and the whole rice value chain. Moreover, strong policy actions are also needed from regional and African organizations in term of management of imports through trade policies and regional bulk purchases.

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further

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observation:

Dependence on rice imports yearly affects the national and regional economy as well as the development of the rice sector in SSA. For this reason, actions need to be implemented from now and in the future to significantly eliminate this dependence. This should be a continual effort.

## 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

AfricaRice is a Center of Excellence on rice research for development focusing on development of the African rice sector. The Center has over time built a strong knowledge base on the dependency on rice imports in Africa. This allowed it to predict the 2008 rice crisis. Therefore, a high degree of confidence should be accorded to the Center's understanding of the issue.

In addition, several evidence-based scientific publications and policy briefs have come out and continue to come out from AfricaRice on the issue.

## 6. Linkages with SDGs (1 to 17)<sup>53</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

The most relevant SDG is number 2: "End *hunger, achieve food security and improved nutrition and promote sustainable agriculture*".

The dependence of African Governments on rice imports is quite related to SDG 2, and especially the point 2.1, that states "By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year around". Previous experience has shown that reliance on rice imports is detrimental to the achievement of this goal in Africa because of the thinness (around 7%) and fragmented nature of the global rice market. Additionally, the rice sector suffered a sharp rise in price instability, reflecting greater uncertainty about supply conditions in the global rice market.

There are many doubts about the quality of the rice imported into Africa because this rice is usually in storage for many years before being shipped to Africa. Recently, poor quality rice has been tracked being imported into some African countries, especially Senegal. Consequently, some of the rice being imported into Africa is not considered safe as is reflected in goal 2.1 of SDG 2.

The issue being discussed is related to the sub goals 2.a (increase investment in all steps of the rice value chain), 2.b (correct and prevent trade restrictions and distortions in world agricultural markets, in this case the rice market) 2.c. (adopt measures to ensure the proper functioning of food commodity markets, in this case rice market, and their derivatives....).

<sup>53</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**7. The case being, linkages with any other issue**

Reliance on rice imports is strongly linked with the trade policy elaborated and implemented by African regional organizations to better manage rice imports. Indeed, rice appears to be the most subsidized and most protected agricultural product in the world. The world's biggest rice producers adopt a high tariff for rice imports to protect their rice sector. For example, countries such as China, India, Indonesia, Japan and Philippines adopt rice tariffs of 65%, 70-80%, 40%, 778% and 40%, respectively while many African countries especially West African countries taxed foreign rice at 10%.

African countries should be courageous to adopt tariffs for rice that would serve to protect their local rice sectors and lead to their development.

The issue is also linked with the improvement of the performance of all the value chain in order to substantially increase the quantity and the quality of African rice. In fact, the production growth rate observed after 2007 needs to be even greater (12% per year) to reach the ambitious goal of lifting the rice self-sufficiency ratio in sub-Saharan Africa to 87% by 2020 and reducing rice imports to about 5 Million tons/year, as called for in AfricaRice's 2011–2020 Strategic Plan for rice research for development in Africa. Otherwise, rice imports will continue to increase.

**8. Additional Supporting Information***Additional information*

Although important policy measures have been implemented to stimulate domestic rice production during the last decade, Africa still depends on the international market to cover in average 40% of its rice demand per year.

As part of its mandate, AfricaRice plays a key role in advising its member countries on critical rice production, processing and marketing issues. For this reason, the AfricaRice analyzes rice stocks, price and fluctuations on international markets to anticipate and predict future situations. For example, the rice crisis in 2008 in Africa was clearly predicted by AfricaRice and the Center's member countries were alerted in 2007 through the Council of Ministers, which is AfricaRice's highest governance and oversight body. Reliance on imports has been raised as a challenge to food security and nutrition in Africa after the rice crisis which led to hunger riots in many African countries such as Egypt, Nigeria, Cameroun, and Côte d'Ivoire.

To face the rice crisis, JICA, in partnership with the Alliance for a Green Revolution in Africa (AGRA), launched an initiative known as the "Coalition for African Rice Development" (CARD) on the occasion of the 4<sup>th</sup> Tokyo International Conference on African Development (TICAD IV) held in Yokohama, Japan, in May 2008. CARD was a new comprehensive initiative to support the efforts of African countries aimed at doubling African rice production within 10 years. CARD also formed a consultative group of donors, research institutions and other relevant organizations to work with rice producing African countries. AfricaRice is also a member of this coalition. The Center supported African countries to elaborate national strategies for rice development (NSRD's) aiming to double rice production within 10 years starting from 2008.

With the collaboration of Michigan State University, AfricaRice and its national partners assessed the competitiveness of national rice production. These actions led to the elaboration of the AfricaRice Strategic Plan which is being implemented since 2011.

AfricaRice estimates that the implementation of its proposed Strategic Plan will lead to a gain

estimated at 9 Million tons increase in milled rice production in SSA. With the implementation of the AfricaRice Strategic Plan, milled rice production in SSA would increase from 21 Million tons to 30 Million tons. This gain corresponds to 44% because of implementation of the AfricaRice Strategic Plan.

Diagne et al. (2013) estimated the potential impact of the Strategic Plan and showed that the total cumulative discounted income benefit expected for all the research-based technologies in all sub-Saharan African countries will be \$10.6 billion in 2020, corresponding to an annual income gain of \$1.8 billion. As a consequence of these income gains, 11.0 million people will be lifted above the \$1.25 purchasing power parity (PPP) poverty line and at least 5.6 million people will no longer be undernourished by 2020.

We stated that reliance on rice imports is a challenge to FSN and that is the case. However, the right word to use is a “threat”. Rice imports are more than a challenge, and in fact a threat to food security and nutrition in Africa. As shown by the food crisis in 2008, Africa's dependency on imports is a very risky, expensive and unsustainable situation, and it may lead to severe food insecurity and civil instability in some African countries.

The nature of the impact of dependency on imports is primarily economic. Indeed, rice imports negatively affect the trade balance of African countries. For instance, in 2013 the Senegalese Ministry of Economy announced a deficit of 16% in Senegal's trade balance due solely to rice imports. This is the case of many African countries. Furthermore, the rice sector especially production is negatively affected by the huge imports into the continent. Moreover, this dependency also affects the social life of Africans especially their health because Asian rice exporters think that Africa is not too demanding in terms of quality. They therefore, export poor quality rice. This is the case this year when Thailand planned to export 11.4 million tons of rice to Africa in two months.

#### *Evidence*

Rice is often considered as one of the most protected commodities in the world and only about 7% of global rice production is traded on the international market (Seck et al., 2013; Saito et al. 2015).

In 2008, Vietnam, India and Egypt banned rice exports for several months, pushing up rice prices, as predicted by the Africa Rice Center in 2007 (AfricaRice, 2011a). Sub-Saharan Africa's reliance on rice imports became painfully visible in 2008 during the food riots in several major capitals.

In 2009, Africa imported a third of the amount of rice available on the international market at an estimated cost 5 billion US dollars (AfricaRice, 2011b).

According to Food and Agriculture Organization statistics in 2013, Africa imported 14.137 million tons of rice at a value of USD 7.53 billion (FAOSTAT, 2016).

In order to manage regional imports, the Economic Community of West African States (ECOWAS) established a trade union with its Common External Tariff implemented since January 2015 (Fiamohe et al., 2015).

According to the International Trade Centre (ITC) trade map, in 2015 the main rice importers in Africa are Senegal (1,371,771 tons) followed by Cote d'Ivoire (1,132,999 tons), Benin (976,695 tons, an important share of this quantity is re-exported to Nigeria and other countries such as Niger, Burkina-Faso), Nigeria (782,757 tons) and South Africa (717,771 tons).

On June 7, 2016, AfricaRice called for vigilance over poor quality imported rice into African countries. Indeed the Centre received credible information on plans by Thailand to export 11.4 million tons of

government stockpiled rice in May and June 2016 (See AfricaRice Newsroom of June 7, 2016).

After this alert, newspapers from West African countries reported that poor quality imported rice has been tracked in parts of West Africa. In Senegal, the National Police recently seized 22,690 tons corresponding to a value of six billion FCFA (US\$10.3 million) of Indian broken rice, unsuitable for human consumption (See AfricaRice Newsroom of June 7, 2016).

One of the evidence is that strong measures have been implemented after the rice crisis to reduce reliance on imports. These measures led to strong and encouraging results concerning increases in rice production. Indeed, between 2007 and 2012, rice production increased annually at 8.4% on average in Sub-Saharan Africa (SSA) and 9.7% in West Africa (Seck et al., 2013). Approximately 71% of the production increase observed in SSA can be attributed to yield increase, and 29% to harvested area expansion. In average, rice yield increased over that period by 108kg/ha per year, two times more than the rice yield worldwide driven by the Green Revolution in Asia estimated at 52kg/ha over the period 1960-2010 (Wopereis et al., 2013).

After the rice crisis, the Economic Community of West African States (ECOWAS) considered regional bulk purchase of imported rice in order to mitigate the effect of the crisis and to prevent future international price shocks on domestic markets of the region. AfricaRice assessed the feasibility of this initiative in Fiamohe et al. (2012). It appeared from the study that ECOWAS has strong and significant market power in the international rice export market. According to the authors, this result implies that bulk purchase of imported rice can confer on ECOWAS member states a greater bargaining power in the rice import market. Therefore, there is evidence to support regional bulk purchase of rice in West Africa.

In addition, in 2015 ECOWAS implemented its Common External Tariff (CET). AfricaRice also assessed the ex-ante impact of this trade policy on the rice sector in West Africa (see Fiamohe et al., 2015b). Using A General Computable Equilibrium model, the authors showed that the current CET will have mixed effects on the rice sector and poverty. Indeed, for some countries such as Ghana and Nigeria, rice imports will increase while other countries will record a decrease in imports (Benin, Guinea, Togo and Cote d'Ivoire). The negative effects of the CET are more pronounced in Nigeria and Guinea. Urban poverty will increase and this will affect the food security of urban citizens.

#### *Knowledge gaps*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Roseline Remans – Bioversity International		
Do you answer on behalf of your institution, or as an individual?	<u>On behalf of</u> <u>Bioversity International</u>	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	<u>Yes</u>		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K26A How can management of food biodiversity (local, global) best contribute to diet quality and sustainability of diets in view of current food system transformations?		
Description of the issue <i>in less than 5 lines</i>	<p>In many settings, diets are dominated by starchy staples and lack the diversity that is necessary for healthy lives. This increases risk for undernutrition as well as diet-related non-communicable diseases. At the same time, loss of agrobiodiversity in production landscapes, increases vulnerability and can lead to reduced productivity on the longer term.</p> <p>More market integration and globalization however decouples the link between local agrobiodiversity and diet diversity and thereby reduces a direct incentive for agrobiodiversity management for healthier and more sustainable diets. Instead of further losing agrobiodiversity, how can we instead better leverage its potential to contribute to healthier and more sustainable diets?</p>		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	Challenge	<u>Opportunity X</u>	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	<p>Reviews on the evidence-base between agrobiodiversity and nutrition is performed by Bioversity International and others, describing case studies of how management of agrobiodiversity can contribute to enhanced diet diversity in different settings (available in December 2016). Previous reports were also developed like a chapter on Biodiversity and Nutrition in the CBD publication on Biodiversity and Health.</p>		

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Main response proposed to address the issue	<ul style="list-style-type: none"> <li>• Mainstreaming monitoring of agrobiodiversity in food production, value chains, and food environments, will provide further insights in key leverage points to enhance management of agrobiodiversity throughout the local and global food system for healthier diets.</li> <li>• Testing interventions more systematically for their effects on ABD – in production, markets and consumption, and related impact on diet quality, will add to identifying effective pathways for ABD management to contribute to quality and sustainability of diets.</li> </ul>
Main actor(s) concerned or involved in the response proposed	

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		<u>Internal</u>	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	XXX		
Nature of the main impact of the issue on FSN	X	X	XXX		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
 ABD management for nutrition will have primary environmental outcomes, but also has important social and economic implications.

## 3. Attributes of the Issue

	Classification (**)	
637. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point	<u>Systemic issue</u>



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638. Breadth: Are there many people affected?	Few		<u>Many</u>	
639. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	<u>Global</u>

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

640. Impact on Availability	+
641. Impact on Access	+
642. Impact on Utilization/ nutrition	+
643. Impact on Stability	+
644. Impact on most vulnerable people	+ particularly those who suffer from low diet diversity
645. Impact on women	+
646. Impact on children	+
647. Impact on marginalized populations	+ particularly those who have limited market access
648. Cost to address the issue	Low <u>Middle</u> High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	+	++	++++++
Moment to act to address the issue	++++	++	++

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	<u>Middle</u>	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**6. Linkages with SDGs (1 to 17)<sup>54</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Most relevant SDG = SDG2

But also strong links to SDG 13 and 15

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>54</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Dr Simon Attwood – Bioversity International	
Do you answer on behalf of your institution, or as an individual?	<u>On behalf of Bioversity International</u>	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	<u>Yes</u>	No
Country of the responding individual/institution Please mention international or regional, the case being	International	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K26B Sustainable intensification is increasingly being seen as a solution to multiple grand challenges</i>		
Description of the issue <i>in less than 5 lines</i>	Sustainable intensification is vital to address multiple grand challenges, but there is ongoing debate about what SI is, what issues it should include and how one should implement sustainable intensification in real systems.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	Challenge	Opportunity	<u>It depends (please specify). The challenge is making SI relevant and not just another fashionable term. The opportunities to address multiple food security and environmental issues are potentially vast.</u>
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Systematic review of 300 papers from 1997-2015 that deal with SI, conducted by Bioversity International and partners. Through a detailed analysis of the literature, we were able to identify the rise in publication rates on SI, the production systems considered for SI (or where tested), definitions and the terms included/excluded, management actions intended to sustainably		

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	intensify in particular production systems, and how SI might be applied in both biophysical and social science contexts.
Main response proposed to address the issue	In terms of how to address the limitations of many current definitions of SI, there needs to be a far more holistic approach that includes central tenets of food (in)security that includes elements often omitted – e.g. nutrition, equity of distribution, access to food, waste of food (e.g. postharvest), ecosystem services, crop diversity and agricultural biodiversity.
Main actor(s) concerned or involved in the response proposed	<p>Researchers need to expand beyond the '&gt;yield + &lt;environmental impact' model of SI to include other elements in definitions and research. More attention needs to be given to non-technological management interventions in how one sustainably intensifies. SI research needs to occur in systems other than terrestrial crops.</p> <p>Policy makers (a very heterogeneous group) need to be aware that there are likely to be trade-offs among different aspects of SI, that SI is not a simple technological fix in many cases, and that distribution of SI benefits needs to be equitable.</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			SI is a response to several drivers (e.g. global population increase, changing consumption patterns, land degradation, biodiversity loss). As such, drivers are both internal and external.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

SI is a highly interdisciplinary concept and suite of potential management, governance and policy interventions that can be applied to a complex array of drivers at the interface of food security, agriculture and environmental management/NRM.

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### 3. Attributes of the Issue

	<b>Classification (**)</b>			
649. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			All elements that <u>can be managed might potentially fall under SI, so very systemic, but can be disaggregated into component parts.</u>
650. Breadth: Are there many people affected?	Few			<u>Hard to see how this is not a global issue and strategy.</u>
651. Scale: local/national/regional/global?	<u>Local</u> <i>Indicate here the precise location</i>	<u>National</u> <i>Indicate here the precise country</i>	<u>Regional</u> <i>Indicate here the precise region</i>	<u>Global</u> <u>Definitely a global issue, but can be expressed at scales from fields, to farms, to landscapes and beyond.</u>

For items 4-11 below, please use the classification [ — —, —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

This is rather difficult to answer in a categorical sense – I have annotated each point, below.

652. Impact on Availability	Potentially ++, but availability of food is often lost in the '>yield + <env. impact' models of SI, so in cases where availability is not explicitly addressed, could be 0
653. Impact on Access	Potentially ++, but access to food is often lost in the '>yield + <env. impact' models of SI. Increased yields could potentially have — effect on access, as poor and marginalized may be excluded by technological-fix approaches.
654. Impact on Utilization/ nutrition	Again, potentially ++, but only 1 paper (of 300) that we reviewed included nutrition in definitions of SI. Major risk of increasing yields and calories, but not nutritional or dietary diversity (or increasing agricultural biodiversity that could lead to this). At present, is probably a —
655. Impact on Stability	Potentially ++ through increased ecosystem services and reduced negative environmental impacts, but if the intensification aspects override the sustainable aspects, then may actually lead to —
656. Impact on most vulnerable people	If technology led, then likely to be 0 to —. If including aspects such as equity and rights, then may be +
657. Impact on women	If technology led, then likely to be 0 to —. If

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	including aspects such as equity and rights, then may be +		
658. Impact on children	If technology led, then likely to be 0 to —. If including aspects such as equity and rights, then may be +		
659. Impact on marginalized populations	If technology led, then likely to be 0 to —. If including aspects such as equity and rights, then may be + Specify as appropriate		
660. Cost to address the issue	<u>Low</u>	<u>Middle</u>	<u>High</u>

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

If SI is defined, researched, deployed and scaled in a manner that addresses central elements of sustainability and food security, then potential to be ++. If used as a rebadged form of conventional intensification, then 0 to —

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The time to act is on the next few years, but the benefits are likely to range from immediate (e.g. improved water quality) to long term (climate change resilience and adaptation)

#### 5. Degree of confidence

Solidity of currently available knowledge base.	<u>Low</u>	<u>Middle</u>	<u>High</u>
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

In many cases, the science around agroecological interventions, the benefits of more diverse systems and the benefits of improved governance and equity are well understood. How they work in combination and in particular systems and agroecologies, and the various synergies and trade-offs of management actions and ecosystem services (e.g. yield and nutrition, yield and biodiversity) are far less understood – hence wide spread of degree of confidence.

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## **6. Linkages with SDGs (1 to 17)<sup>55</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Links most obviously to SDGs 2 and 15, with 2.4 and 2.5 contributing to the other targets. 15.1, 15.2 and 15.5 are amongst the environmental goals. If SI addresses greater range of issues and opportunities, then Goals 5 and 12 could be addressed.

## **7. The case being, linkages with any other issue**

Aichi targets 7 and 13; land sparing/sharing arguments.

## **8. Additional Supporting Information**

### *Additional information*

Presentation delivered on our review findings at EcoSummit 2016

Paper being prepared for submission in next few weeks.

### *Evidence*

Loos, J., Abson, D.J., Chappell, M.J., Hanspach, J., Mikulcak, F., Tichit, M. and Fischer, J., 2014. Putting meaning back into “sustainable intensification”. *Frontiers in Ecology and the Environment*, 12(6), pp.356-361.

Hanspach, J., Abson, D.J., Loos, J., Tichit, M., Chappell, M.J. and Fischer, J., 2013. Develop, then intensify. *Science*, 341(6147), pp.713-713.

Attwood et al. 2016

[https://www.researchgate.net/publication/303858215\\_A\\_sustainable\\_pathway\\_to\\_improved\\_food\\_security\\_in\\_aquatic\\_agricultural\\_systems](https://www.researchgate.net/publication/303858215_A_sustainable_pathway_to_improved_food_security_in_aquatic_agricultural_systems)

<sup>55</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



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*Knowledge gaps*

Developing generalized evidence basis for intervention responses;  
Variability in general response principles in specific systems and agroecologies;  
How to deliver SI in situ;  
Trade-offs and synergies among elements of SI and components of production land and water scape;  
Ecosystem service thresholds and trade-offs.

*References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Oscar Ortiz – International Potato Center		
Do you answer on behalf of your institution, or as an individual?	On behalf✓	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes✓	No	
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K27A Food stability is undermined by extreme weather events and other consequences of climate change</i>		
Description of the issue <i>in less than 5 lines</i>	Food stability which dynamically affects food availability, access and utilization, is jeopardized by sudden extreme weather such as typhoons and floods, but also by processes like salination. Resulting food vulnerability has gender implications.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge✓	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Participatory scoping studies have been undertaken in six sites in five countries in Asia with sub-regions – mainly highlands and coastal plains – that have been targeted for potential food vulnerability. Action plans were developed and validated with stakeholders. Sites are highland NE India, mountain areas of Hunan, China, two sites in central Philippines, central flood plain of Vietnam and the islands of Maluku in Indonesia		

Main response proposed to address the issue	There are two main responses with multiple detailed actions depending on specific circumstances. First main response is about <b>diversification of agri-food systems</b> . This includes the incorporation of root and tuber crops with nutrition benefits and greater resilience in the face of both extreme and slow-developing events and processes linked to climate change. Second main response involves <b>gender- and youth-responsive agri-food system innovation</b> . Based on a standardized methodology, we identify how gender and other social norms affect access to innovation processes and to specific types of innovation. We design gender and youth sensitive interventions that particularly target
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	access to new lines/clones/varieties with climate-smart and nutritional properties, access to crop management technologies and access to new options and practices related to marketing and value adding, including collective action.
Main actor(s) concerned or involved in the response proposed	Farming households, with direct and informed interactions with women, men and female and male youth; local development infrastructure staff, especially those involved with large-scale "investment projects" such as those supported by IFAD; public sector research organizations in agriculture and nutrition; private sector, especially in the areas of seed distribution and food processing.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<b>External driver</b>	<b>Internal to food systems</b>	<b>Both</b>
Is the issue either or both?			Briefly mention how this may be the case

(*)	<b>Economic (and productive)</b>	<b>Social (and Cultural)</b>	<b>Environmental (resources, etc.)</b>	<b>Governance (institutions, rights, etc.)</b>	<b>Other (SPECIFY)</b>
Main nature of the issue	Destruction of food production in extreme events and yield decline under depletion of NR quality	Differential impact of food vulnerability on women, men and youth and different means to make agri-food systems more resilient	Unpredictable extreme weather events and slow deterioration of NRs related to climate change impacting on food stability		
Nature of the main impact of the issue on FSN	Reduction of available food for direct consumption and for sale to market	Differential capacities of women, men and youth to address food vulnerability	Destruction of standing food crops and reduction in marketable product		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

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	<b>Classification (**)</b>			
661. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			✓ Systemic issue
662. Breadth: Are there many people affected?	Few			✓ Many
663. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>✓ Specific eco-regions of highland areas and coastal plains are highlighted as especially high risk areas</i>	Global

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

664. Impact on Availability	— —
665. Impact on Access	— —
666. Impact on Utilization/ nutrition	— —
667. Impact on Stability	Loss of food stability from CC is the issue
668. Impact on most vulnerable people	— — Very vulnerable people are found the key eco-regions identified, ie highland and coastal plains, especially those exposed to typhoons and flooding
669. Impact on women	— —
670. Impact on children	— —
671. Impact on marginalized populations	— — High concentrations of marginalized populations in the highland areas identified
672. Cost to address the issue	Low ✓ Middle High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	✓		
Moment to act to address the issue	✓		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further

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observation:

### 5. Degree of confidence

Solidity of currently available knowledge base.	✓Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Food stability and its erosion leading to food vulnerability is the least researched aspect of food security. The intersection of climate change induced food vulnerability with social and especially gender norms constraining the capacity of communities to respond is still under-researched

### 6. Linkages with SDGs (1 to 17)<sup>56</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Most relevant: 2 Zero hunger

Links to: 1. No poverty; 5. Gender equality

### 7. The case being, linkages with any other issue

### 8. Additional Supporting Information

<sup>56</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Oscar Ortiz		
Do you answer on behalf of your institution, or as an individual?	On behalf✓	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes✓	No	
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K28A Growing conflicts for water utilization between agriculture for food and alternative uses</i>		
Description of the issue <i>in less than 5 lines</i>	Agriculture for food production is competing for water with alternative uses, which include agriculture for industry, mining and urbanization, which puts pressure on the efficient utilization of water for food production..		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge✓	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Literature review indicate from diverse studies the growing water scarcity, and particularly the competition for water from different sectors, being agriculture for food only one of them, and the need to optimize the use of water for agriculture..		

Main response proposed to address the issue	Improving water use efficiency (WUE) in agriculture is the only option to reduce the pressure for this scarce resource, and alleviate the competition for water for other uses, particularly direct consumption by the growing cities. Alternatives to improve WLE involve working at the genetic level of crops in order to determine the genetic basis to improve WLE and generate new varieties of food crops that can produce more with less water. The development and utilization of improved irrigation methods guided by precision agriculture is also a response. Research is on-going to develop irrigation technologies and decision support tools. In addition, there is the need to work intensively in raising awareness of the importance of conserving and utilizing water in the
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	most efficient way, not only in agriculture but in other sectors.
Main actor(s) concerned or involved in the response proposed	Farming households who make the final decision of water management, together with farmer organizations, government and NGO who work on water issues, and civil society, who also make decisions on alternative uses of water.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<b>External driver</b>	<b>Internal to food systems</b>	<b>Both</b>
Is the issue either or both?			Involves both internal and external factors of the food system as involves agriculture activities and water management for food production, but also a number of external demands for water utilization

(*)	<b>Economic (and productive)</b>	<b>Social (and Cultural)</b>	<b>Environmental (resources, etc.)</b>	<b>Governance (institutions, rights, etc.)</b>	<b>Other (SPECIFY)</b>
Main nature of the issue	Limited availability of water for food production can have tremendous economic implications for the food system	Multiple demands for water, among which agriculture is one of them, could generate social conflicts	Pressure on water utilization will affect natural resources	Decision making on different water uses involves a number of stakeholders and decision makers	
Nature of the main impact of the issue on FSN	Less water available for agriculture will reduce food production	Social groups already under pressure because of water scarcity may aggravate their	Increased demand for water may compete also with natural environments potentially affecting biodiversity	Potential conflicts among different stakeholders	



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		conditions			
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(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
673. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			✓ Systemic issue
674. Breadth: Are there many people affected?	Few			✓ Many
675. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Specific eco-regions of highland areas and coastal plains are highlighted as especially high risk areas</i>	✓ Global

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

676. Impact on Availability	— —
677. Impact on Access	— —
678. Impact on Utilization/ nutrition	— —
679. Impact on Stability	— —
680. Impact on most vulnerable people	— — already under high vulnerability
681. Impact on women	— —
682. Impact on children	— —
683. Impact on marginalized populations	— —
684. Cost to address the issue	Low Middle ✓ High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
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Moment when the issue will have an impact		✓	✓
Moment to act to address the issue	✓		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	√Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There is already a good knowledge about water related issues, in particular about the competition for the use of water among food production and alternative uses, including human consumption in particular.

### 6. Linkages with SDGs (1 to 17)<sup>57</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Most relevant: 2 Zero hunger

Links to: 6 Clean Water and Sanitation. 13 Climate Action. 15 Life on Land

<sup>57</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**7. The case being, linkages with any other issue****8. Additional Supporting Information***Additional information**Evidence*

There is an extensive list of publications about water utilization and conflicts. Some of the most important are:

- Molle, F. and J. Berkoff. 2006. Cities versus agriculture: revisiting intersectoral water transfers, potential gains and conflicts. Comprehensive Assessment Research Report 10. Colombo. Sri Lanka. IWMI,
- Rulli M.A., A. Saviuri and P. D'Odorico. 2013. Global land and water graving. PNAS. 110, 3:892-897.
- Molden, D., T. Oweis, P. Steduto, P. Bindraban, M.A. Hanjra, J. Kijne. 2010. Improving agricultural water productivity: between optimism and caution. Agricultural Water Management. 97, 4: 528-535.

*Knowledge gaps**References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Oscar Ortiz		
Do you answer on behalf of your institution, or as an individual?	On behalf✓	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes✓	No	
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K28B Agriculture not providing opportunities for youth who migrate leaving the farms with limited labor.</i>		
Description of the issue <i>in less than 5 lines</i>	Increasing migration from rural areas to cities is a growing trend, particularly young people migrates because do not find in agriculture and rural areas activities that satisfy their expectations in terms of income and quality of life. Agriculture with less labor.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge✓	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Literature review. There are a number of studies showing the trend of migration from rural areas, agriculture to cities, and urban population being higher than rural in several countries of the world. This review shows that youth, in particular, do not find agriculture and food production satisfying their needs and expectations in terms of income generation and quality of life in general.		

Main response proposed to address the issue	Agriculture for food production needs to become an attractive opportunity to generate income and ways of living for the rural population, particularly the youth. They need to find different satisfactions from their involvement in agriculture, starting from an economic benefit, but also a recognition from the society in general on the importance of agriculture and food production for stability, economic growth, and sustainable development.
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Main actor(s) concerned or involved in the response proposed	Farming households, with direct and informed interactions with women, men and female and male youth; government and NGOs, to design policies and incentives for people to stay in rural areas and involved in agriculture and food production.
--	--

*For the public inquiry fields below are optional*

✓

*d*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			It is internal and external at the same time because, on the one hand agriculture and food production do not satisfy the needs of young people in rural areas, and urban and industrial development provide alternative and attractive options.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	Less labor available in rural areas will increase production costs for food	Migration will influence changes in consumption patterns	If farms are left unattended, soil erosion and natural resource degradation could intensify		
Nature of the main impact of the issue on FSN	Can can huge economic implications if rural areas are left with limited human capital	Socioeconomic changes in both rural and urban areas will influence food production and demands	If farms are left unattended, degradation of natural resources could become a major problem in several areas.		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

Classification (**)
---------------------

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

685. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			✓ Systemic issue
686. Breadth: Are there many people affected?	Few			✓ Many
687. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>✓ Regional patters of migration differ in Africa. Asia or Latin America</i>	Global

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

688. Impact on Availability	— —		
689. Impact on Access	— —		
690. Impact on Utilization/ nutrition	— —		
691. Impact on Stability	— —		
692. Impact on most vulnerable people	— —		
693. Impact on women	— —		
694. Impact on children	— —		
695. Impact on marginalized populations	— —		
696. Cost to address the issue	Low	Middle	✓ High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact		✓	✓
Moment to act to address the issue	✓		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**5. Degree of confidence**

Solidity of currently available knowledge base.	Low	✓ Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Migration trends are known for several years, but are intensifying in recent decades. This is affecting particularly less developed countries.

**6. Linkages with SDGs (1 to 17)<sup>58</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Most relevant: 2 Zero hunger

Links to: 1. No poverty; 5. Gender equality

**7. The case being, linkages with any other issue****8. Additional Supporting Information**

*Additional information*

<sup>58</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Evidence*

There is extensive literature on the subject, for example:

- Crivello, G. 2014. 'Becoming somebody': youth transitions through education and migration in Peru. *Journal of Youth Studies* 14:395-411.
- Arizoe, L. 2014. Mexican agricultural development policy and its impact on rural women. *Migration Women and Social Development* 11: 96-113.
- White, B. 2012. Agriculture and the generation problem: rural youth, employment and the future of farming. *IDS Bulletin* 43, 6: 9-19.
- Bezu, S. and S. Holden. 2014. Are rural youths in Ethiopia abandoning agriculture. *World Development* 64:259-272.

*Knowledge gaps**References*



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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Nigel Preston – WorldFish		
Do you answer on behalf of your institution, or as an individual?	On behalf of		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Malaysia – international		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>			
Description of the issue <i>in less than 5 lines</i>	<i>K29A Fish are a major source of key nutrients but fish consumption has not been fully integrated into strategies to combat undernutrition, nor are nutritional considerations well integrated into aquaculture and fisheries strategies</i>		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>		Opportunity	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Combining data on dietary nutrition, and fish catch, Golden <i>et al.</i> (2016) predict that 10% of the global population could face micronutrient and fatty-acid deficiencies driven by fish declines over the coming decades, especially in the developing nations at the Equator.		
Main response proposed to address the issue	Establish new multidisciplinary partnerships that can react, at meaningful scales, to the multiple challenges revealed by recent analyses of dietary nutrition and fish production trends in the developing world. To meet future demand for fish, particularly in developing countries, production will need to double by 2030 (FAO 2014). The scale of this challenge requires research innovations across the whole spectrum of aquaculture and fisheries production systems and associated value chains		

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Main actor(s) concerned or involved in the response proposed

Government agencies and policy makers, development economists, fisheries, aquaculture, nutrition, public-health, social science, ecosystem and climate experts, development agencies and private sector investors.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	√	√	External drivers of sustainable production internal drivers of consumption

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	√	√	√	√	
Nature of the main impact of the issue on FSN	√	√	√	√	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
697. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue
698. Breadth: Are there many people affected?				Many
699. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global

For items 4-11 below, please use the classification [ — — , — , 0 , + , ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

700. Impact on Availability	++
701. Impact on Access	++
702. Impact on Utilization/ nutrition	++
703. Impact on Stability	++

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704. Impact on most vulnerable people	++ 97% of communities with a high dependencies on fish are in developing countries		
705. Impact on women	++ fish has a critical role to play in improving nutrition for pregnant and lactating women		
706. Impact on children	++ and improving childhood nutrition in the first 1000 days of life.		
707. Impact on marginalized populations	++ The millions of marginalized people dependent on fish for income and food security (notably poor women and young adults) are often unable to fully participate in the governance of their resources.		
708. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

Fisheries and aquaculture contribute to livelihoods for 800 million people; in the fisheries sector, 90 percent of those are in small-scale fisheries and 97 percent live in developing countries.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	√ Aquaculture	√ Fisheries	
Moment to act to address the issue	√		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

Aquaculture can provide rapid (1-5 year) direct benefits to the poor (Toufique and Belton 2014).  
Fishery reforms can take under 10 y to reach recovery targets (Costello et al .

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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FAO. 2016. The State of World Fisheries and Aquaculture 2016. Contributing to food security and nutrition for all. Rome. 200 pp.

Smith et al. (2016) Global Expanded Nutrient Supply (GENuS) Model: A New Method for Estimating the Global Dietary Supply of Nutrients

#### 6. Linkages with SDGs (1 to 17)<sup>59</sup>

<sup>59</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Increasing productivity of fisheries and aquaculture to provide poor and marginalized women, men and youth with more food, nutrition and income is highly relevant to SDG 1: No poverty and SDG2: Zero hunger.

Enhancing the production and consumption of fish via sustainable and equitable innovations is strongly linked to range of related goals targeting improved human health (SDG 3), gender equality (SDG 5), job creation (SDG 8), social equity (SDG 10), reduced food waste (SDG 12), climate adaptation (SDG 13), sustainable management of land and water resources (SDG 15), and effective institutions and development policies (SDG 16).

Fisheries and aquaculture make unique contributions to SDG 14: Life below water via protecting and restoring water-related, marine and coastal ecosystems and encouraging economic growth of Small Island Developing States.

## **7. The case being, linkages with any other issue**

Adding fish to the cereal-based diets, particularly of women and children, has a key role to play in global strategies to prevent stunting. There is a critical need for a more integrating approach across the spectrum of food production and consumption in the developing world. This would enhance our chances of meeting the challenge of reducing the number of people in the developing world that suffer from micronutrient deficiencies and ensuring that they consume an adequate number of food groups.

## **8. Additional Supporting Information**

### *Additional information*

The HLPE's own observation (2014) that fish is "crucial to any debate and action to reduce poverty and improve food security and nutrition" highlights the increasingly critical role of fisheries and aquaculture in eliminating hunger, promoting health and reducing poverty. Fisheries and aquaculture contribute to livelihoods for 800 million people and provide 3.1 billion people with 20% of their animal protein as well as micronutrients and essential fatty acids critical to cognitive and physical development. Three-quarters of the countries where fish contributes more than one-third of animal protein in the diet are low-income food-deficit countries where fish is often the cheapest and most accessible animal-source food. To meet future demand for fish, particularly in developing countries, production will need to double by 2030 (FAO 2014). The scale of this challenge requires research innovations across the whole spectrum of aquaculture and fisheries production systems and associated value chains. Evidence in support of the probability of success that investment in fisheries and aquaculture R&D will achieve sustainable, transformational impacts on food security and nutrition that are as high as, or higher than, any other food sector includes the following:.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

#### *Evidence*

- Fish is the fastest-growing animal-source food in the world (FAO 2015), and in low-income food-deficit countries it is often the cheapest and most accessible for poor consumers (Kawarazuka and Béné 2011, Belton and Thilsted 2014).
- Sustainable aquaculture practices offer water, energy, and feed conversion efficiencies superior to any other domesticated animal food production system (Hall et al 2011).
- Fish is the only animal-source food that can be produced in saltwater, offering unique advantages for climate resilient production.
- Fisheries and aquaculture contribute to livelihoods for 800 million people; in the fisheries sector, 90 percent of those are in small-scale fisheries and 97 percent live in developing countries.
- Sustainable intensification of production - including in integrated fish and farming systems - along with nutrition sensitive processing and trade, offer distinct opportunities to build income and assets of women and youth.
- Fish consumption has a critical role to play in boosting dietary diversity and reducing the number of people who suffer from micronutrient deficiencies, with lifelong benefits for health and productivity.

#### *Knowledge gaps*

Assumptions about the lack of suitable sites and technologies to enable the sustainable growth of aquaculture to have transformational impacts on food security and nutrition in the developing world need to be more rigorously tested. This should include recent developments in coastal desert aquaculture (see <http://www.naqua.com.sa/about-us.php>), and interface of fresh and saltwater in the mega-deltas of the Ganges/Brahmaputra (Bangladesh), Irrawaddy (Myanmar) and Mekong (Cambodia). As recently observed by Golden *et al.*, (2016) “We need better data on freshwater fisheries and aquaculture, as well as on the nutrient composition of foods and nutritional status of more human populations around the world. Improvements should include separating data on farmed and wild fish to better characterize vulnerability to micronutrient deficiencies.”

#### *References*

- Belton B and Thilsted SH. 2014. Fisheries in transition: Food and nutrition security implications for the global South. *Global Food Security* 3(1):59–66.
- Costello C et al. 2016 Global fishery prospects under contrasting management regimes. *Proceedings of the National Academy of Sciences USA* 113:5125-5129
- Golden, C.D., Allison, E.H., Cheung, W.W., Dey, M.M., McCauley, D.J., Smith M., Vaitla, B., Zeller, D., Myers, S.S. (2016) Nutrition: Fall in fish catch threatens human health. *Nature*. 15:534(7607):317-20. doi: 10.1038/53431
- FAO. 2016. The State of World Fisheries and Aquaculture 2016. Contributing to food security and nutrition for all. Rome. 200 pp
- Hall SJ, Delaporte A, Phillips MJ, Beveridge M and O’Keefe M. 2011. *Blue Frontiers: Managing the Environmental Costs of Aquaculture*. Penang, Malaysia: WorldFish Center.
- Kawarazuka N and Béné C. 2011. The potential role of small fish in improving micronutrient deficiencies in developing countries: Building the evidence. *Public Health Nutrition* 14(20):1–12.
- Smith M.R., Micha, R., Golden, C.D., Mozaffarian, D., Myers, S.S. (2016) Global Expanded Nutrient Supply (GENUS) Model: A New Method for Estimating the Global Dietary Supply of Nutrients
- Toufique KA and Belton B. 2014. Is aquaculture pro-poor? Empirical evidence of impacts on fish consumption in Bangladesh. *World Development* 64:609–20.

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	International Centre for Agriculture in Dry Areas (ICARDA)	
Do you answer on behalf of your institution, or as an individual?	ICARDA	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K30A Micro-nutrient deficiency is widespread in South Asia and Sub-Saharan Africa, causing malnutrition in over 2 billion people. It has debilitating health and human development implications.</i>		
Description of the issue <i>in less than 5 lines</i>	Over two billion people in the developing world are malnourished and affected by micronutrient malnutrition. More than 47% of women and pre-school children in developing countries suffer from iron deficiency that impairs physical and mental growth. Zinc deficiency is also prevalent in the developing world that hampers growth and development, and weakens the immune system.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b>Challenge</b>	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Micronutrient malnutrition can be addressed through food diversification, food fortification and nutrient supplementation, but these measures are often beyond the reach of the poor and marginal elements of society that has equity issues. To address this challenge, Biofortification through the utilization of natural genetic variation in major crops is available to enrich staple foods with micronutrients. Under the HarvestPlus program of CGIAR, major crops that include rice, wheat, pearl millets, common bean, sweet potato, cassava, maize and lentil have been biofortified successfully with iron, and zinc.		

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Main response proposed to address the issue	Biofortification, the process of breeding crops to increase their nutritional value, is undertaken by using the genetic diversity within wild relatives and landraces of crops and this material is housed within global gene-banks. To date more than 1700 germplasms including wild species, breeding lines, and released cultivars from over 20 countries have been analyzed for iron and zinc contents. Iron and zinc were found to be present in the range of 43-132 ppm and 22-90 ppm respectively in these materials. This significant variation in iron and zinc contents in wild accessions has encouraged scientists to proceed further in genetic enhancement through pre-breeding efforts. Some promising lines showed stability in iron and zinc contents, and have moderate to high heritability.
Main actor(s) concerned or involved in the response proposed	NARS partners, CGIAR centers, and farmers

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			It is both internal to food system which depends on a few commodities (energy rich protein deficient diet) and external as soils have become micronutrient deficient.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	Economic and productive				
Nature of the main impact of the issue on FSN	Nutritional security				

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

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### 3. Attributes of the Issue

	<b>Classification (**)</b>			
709. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	<b>Food and nutrition systems as a whole</b>			Systemic issue
710. Breadth: Are there many people affected?	Few			<b>Many (two billion)</b>
711. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
712. Impact on Availability	++			
713. Impact on Access	+			
714. Impact on Utilization/ nutrition	++			
715. Impact on Stability	+			
716. Impact on most vulnerable people	Malnourished people in South Asia and Sub-Saharan Africa			
717. Impact on women	++			
718. Impact on children	++			
719. Impact on marginalized populations	Poor people with limited access to nutritious food			
720. Cost to address the issue	Low	<b>Middle</b>	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The Government of Bangladesh has involved farmers, extension workers and NGOs in a comprehensive dissemination program to out-scale biofortified lentil cultivars. It is estimated that about 110,000 ha is covered by these varieties with an average production of 1.3 t/ha. In this respect the country is producing more than 140,000 t of micronutrient-dense varieties for the local consumption which have shown a positive impact on the nutritional wellbeing of communities.

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	It is a current issue		
Moment to act to address the issue		7-10 years	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Current breeding programs have mainstreamed biofortification as one of the means to address the



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issue of micronutrient deficiency and have started delivering the product of focused crops in target countries. It takes 7-10 years show the impact.

### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	<b>High</b>
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There is clear evidence to support the argument that a focus on biofortification can yield positive outcomes in human nutrition and there is a need to expand this approach beyond the current focus commodities.

### 6. Linkages with SDGs (1 to 17)<sup>60</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**Good health and wellbeing which is also linked with zero hunger, and responsive consumption and production.**

### 7. The case being, linkages with any other issue

Access to diversified food and income

### 8. Additional Supporting Information

*Additional information*

<sup>60</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Evidence*

*Knowledge gaps*

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Jackie Hughes, Deputy Director General – Research – IRRI		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K31A Rapid depletion of groundwater in parts of India and Bangladesh will constrain future productivity growth.</i>		
Description of the issue <i>in less than 5 lines</i>	The water table in parts of Bangladesh drops by up to 1.5m per year due to expansion of irrigation (21 shallow tube wells 1980; about 1.62 million 2012). Intensive rice-wheat and rice-rice cultivation in India caused a 70% increase in water use over 30 years.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	In Bangladesh, the <i>boro</i> rice crop (dry-season crop, irrigated) accounts for 40% of total area (4.75 million ha out of 11.65 million ha) and 55% of total paddy production of 51 million tons. Groundwater is vital for irrigation. In India, as shown by Shah (2013) the majority of Punjab, Haryana, Western Uttar Pradesh, Tamil Nadu, Andhra Pradesh and Telangana account for 37% of Indian rice production and groundwater is already overexploited. (see #8)		

Main response proposed to address the issue	Proposed response for India: Intensification of rice production in eastern India, which was left out of the first Green Revolution, to lower the pressure on the water-stressed areas of northwest and southern regions. However, the shift of rice production from Northwest to Eastern India would not be possible without major policy reforms related to input and minimum support price for rice. India's subsidy for electricity, diesel, and shallow tube wells has made excessive withdrawal of groundwater worse. In addition, The futuristic technological solution for the Eastern region should take into account the ongoing transformation of rice farming in eastern India and
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	these changes should be overlaid with the issue of sustainability of natural resources such as land, water, and environment to find an optimum solution for the intensification of the rice sector. For Bangladesh: Policy reforms to improved efficiency of ground water use and reduce pressure on boro crop by adjusting rice crop calendar.
Main actor(s) concerned or involved in the response proposed	The Government of India and state governments Indian Council of Agricultural Research International Rice Research Institute  The Government of Bangladesh

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<b>External driver</b>	<b>Internal to food systems</b>	<b>Both</b>
Is the issue either or both?		Internal to food systems	

(*)	<b>Economic (and productive)</b>	<b>Social (and Cultural)</b>	<b>Environmental (resources, etc.)</b>	<b>Governance (institutions, rights, etc.)</b>	<b>Other (SPECIFY)</b>
Main nature of the issue	X		X		
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
721. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			
722. Breadth: Are there many people affected?				Many
723. Scale: local/national/regional/global?			Regional	
			South Asia	
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
724. Impact on Availability				
725. Impact on Access				
726. Impact on Utilization/ nutrition				

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

727. Impact on Stability			
728. Impact on most vulnerable people	Specify as appropriate		
729. Impact on women			
730. Impact on children			
731. Impact on marginalized populations	Specify as appropriate		
732. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		Medium term	
Moment to act to address the issue	now		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>61</sup>

<sup>61</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**7. The case being, linkages with any other issue****8. Additional Supporting Information**

*Additional information*

*Evidence*

According to an article published in *National Geographic*, a study by the International Water Management Institute published in the *Journal of Water Resource Management*, the groundwater table in Tamil Nadu is dropping at an average of 1.4 meters per year. The farmers in the state are pumping water at a rate of 8% more than the rate is being replenished. In the case of northwest India, the groundwater level is declining by 4 cm per year, according to a study published in *Nature* by Rodell et al (2009). Many other studies estimate the ground water depletion in Punjab and Haryana to be much greater.

*Knowledge gaps*

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Hei Leung – IRRI	
Do you answer on behalf of your institution, or as an individual?	Institution	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K31B Rice productivity is highly sensitive to climate change, which explains around 33% of rice yield variation globally<sup>1</sup></i>		
Description of the issue <i>in less than 5 lines</i>	To meet projected demand for rice, an additional 112 million tons of rice is needed by 2035 <sup>2</sup> ; rice yields must increase by 1.5–2% annually (about double the current 0.8% increase/year), under the multiple constraints of decreasing arable land, less accessible water, and climate change. Currently, there is insufficient investment to support public breeding institutions to address the problem.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Rice supply-demand models Databases and website: iron deficiency anemia (IDA) : <a href="http://www.who.int/nutrition/topics/ida/en/">http://www.who.int/nutrition/topics/ida/en/</a>  Global database on anemia <a href="http://www.who.int/vmnis/database/anaemia/en/">http://www.who.int/vmnis/database/anaemia/en/</a>		

Main response proposed to address the issue	<p>We need to safeguard rice productivity under the stressful environments caused by climate change, including drought, coastal flooding, rising seawater, growing pest and disease pressure.</p> <p>We need to develop climate-ready rice that can be readily deployed in climate-vulnerable regions. We need to tap into the wealth of genetic resources in rice, and extract the useful diversity to accelerate</p>
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	breeding  We need a comprehensive approach that makes use of the latest genetic sequencing technology, high-throughput (HTP) phenotyping methodologies, bioinformatics, and computational biology integrated with geographical information system (GIS) data to boost the methods and systems by which we cope with challenges brought by climate change
Main actor(s) concerned or involved in the response proposed	Rice growing countries, National Agricultural Research and Extension System, partnership with advanced research institutions, and private sector.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?	External		

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	Crop productivity and income generation		Crop production and resource use efficiency		
Nature of the main impact of the issue on FSN	Reduce poverty		Sustainability		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Achieving sustainable rice productivity under stress conditions will benefit resource poor farmers and consumers, hence contributing to reduction in poverty.

## 3. Attributes of the Issue

	<i>Classification (**)</i>	
733. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?		Systemic issue
734. Breadth: Are there many people affected?		Many



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735. Scale: local/national/regional/global?	Local	National	Regional	Global
		<i>South east Asian countries and South Asia (India)</i>	<i>Climate change vulnerable regions, e.g. major delta areas</i>	
For items 4-11 below, please use the classification [ — —, —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
736. Impact on Availability	++			
737. Impact on Access	++			
738. Impact on Utilization/ nutrition	+			
739. Impact on Stability	++			
740. Impact on most vulnerable people	+ (Countries most vulnerable to climate change. Coastal and delta areas )			
741. Impact on women	++ (nutritious rice, high Fe/Zn rice)			
742. Impact on children	++ (nutritious rice)			
743. Impact on marginalized populations	+			
744. Cost to address the issue		Middle		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

Timeframe (*)		Medium term (5-10 years)	
Moment when the issue will have an impact		Medium to long-term 5-10 years	
Moment to act to address the issue	Now		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.			High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

For over six decades, IRRI has engaged in rice improvement in collaboration with rice-growing countries around the world. It has been estimated that 60% of the varieties grown in developing countries have backgrounds of IRRI bred-varieties. IRRI has been at the forefront of using genetic diversity and traits to develop high yield and stress tolerant rice varieties under different environments.

#### **6. Linkages with SDGs (1 to 17)<sup>62</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG#2 No hunger

SDG#1 No poverty

SDG#3 Good health and well-being

#### **7. The case being, linkages with any other issue**

#### **8. Additional Supporting Information**

*Additional information*

<sup>62</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

*Evidence*

The released varieties with tolerance to flooding, salinity and drought are widely adopted in SEA and South Asia. This illustrates the power of applying genetic solution to solved problems in rice production caused by adverse climate. However, future rice varieties will need a much broader genetic base to deal with the adverse environments brought by extreme climatic conditions.

Also recent success in sequencing 3,000 germplasm in the IRRI Genebank revealed new diversity to accelerate rice breeding.

*Knowledge gaps*

Lack of understanding of how current and future environments affect crop performance poses a serious risk for food security. Discovering the mechanisms underpinning adaptation of rice varieties to a changing climate is now top priority for breeding programs in all major rice-growing countries. The gap must be filled to ensure rice productivity particularly in regions that are highly vulnerable to climate change.

*References*

<sup>1</sup>Ray DK, Gerber JS, MacDonald GK, West PC. 2015. Climate variation explains a third of global crop yield variability. *Nature Communication* 6:5989. DOI:10.1038/ncomms6989

<sup>2</sup>Seck, PA, Diagne A, Mohanty S, and Wopereis MC. 2011. *Food Sec.* DOI 10.1007/s12571- 012-0168-1

<sup>3</sup>The 3,000 Rice Genomes Project. 2014. *The 3,000 Rice Genomes.* *GigaScience* 3:7

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Jackie Hughes – IRRI	
Do you answer on behalf of your institution, or as an individual?	Institution	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K31C Non-communicable diseases and malnutrition challenges requires a diet-based solution.</i>		
Description of the issue <i>in less than 5 lines</i>	Refer sustainable goals		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>		Opportunity	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Much of the world is dependent on rice as the main source of carbohydrates and calories. Increasing the nutrient content of rice grains, minimizing contamination, increasing grain quality and eliminating losses is critical as many of these people have limited access to other components of a balanced diet and thus rely on rice as a cultural staple.		

Main response proposed to address the issue	<ol style="list-style-type: none"> <li>1) Rice research priority is to ensure knowledge is generated across the complex global agri-food system through value chain/value web concept to ensure food and nutritional security and contribute to the health of rice consumers.</li> <li>2) Many of the issues associated with meeting the demand for rice as food in the face of climate change with less water and land is to enhance higher genetic gains through modern breeding and minimizing the rice breakage during milling and reducing the wastage during processing.</li> <li>3) For the global poor, access to sufficient food for a healthy diet with enriched micronutrients and reducing heavy metals is</li> </ol>
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	<p>a prime target to ensure nutritional security.</p> <p>4) As type 2 diabetes and non-communicable diseases are increasing, for the urban rice-consuming world diets can be improved with high fibre, low glycemic index rice.</p> <p>5) Understand food markets and bring the concept of value-chain driven research by upgrading modern precision breeding.</p>
Main actor(s) concerned or involved in the response proposed	Plant Breeders, Rice Production Chain and Consumers

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			Briefly mention how this may be the case

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue					Health & Nutrition
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	<i>Classification (**)</i>			
745. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
746. Breadth: Are there many people affected?				Many
747. Scale: local/national/regional/global?				Global

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

748.	Impact on Availability	
749.	Impact on Access	
750.	Impact on Utilization/ nutrition	++
751.	Impact on Stability	
752.	Impact on most vulnerable people	Broad Spectrum (and a positive impact on urban populations)
753.	Impact on women	
754.	Impact on children	
755.	Impact on marginalized populations	Specify as appropriate
756.	Cost to address the issue	Medium

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	Current Issue and Growing		
Moment to act to address the issue	Currently needs to be addressed		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with SDGs (1 to 17)<sup>63</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

<sup>63</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>BARRON Jennie – International Water Management Institute</b>		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	International Water Management Institute Sri Lanka		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K32A More nutrition-dense diets needed for human wellbeing appropriate more water, especially under higher variability of rainfall under climate change</i>		
Description of the issue <i>in less than 5 lines</i>	Staple crops (major grains such as maize, wheat rice) contains energy but not necessarily micro and macro nutrients needed for healthy diets. To meet need of healthy diets both for shares of population affected by malnutrition and for obesity. Water appropriated to produce AFS as well as more nutritional food incl vegetables and fruit		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<p>Using estimates of water appropriation for yield (ie M3 per kg produce) provides estimates on appropriation of water needed per unit nutritional diet. Whereas this has been done for eg energy in diets (kcal) , to date there is no global assessment estimating nutritional gain per unit of appropriated water .</p> <p>Nevertheless, producing 1kg DM of vegetable/fruit/AFS typically requires more than 1 kg DM wheat/rice/maize (eg <a href="http://waterfootprint.org/en/water-footprint/product-water-footprint/water-footprint-crop-and-animal-products/">http://waterfootprint.org/en/water-footprint/product-water-footprint/water-footprint-crop-and-animal-products/</a> for some generalized values)</p>		



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	<p>It will be critical for sustainable food systems to address water productivity from farm to fork , in order to maximize nutrition per unit appreciated water., to meet requirements of affordable and accessible nutritional diets both for current malnutrition affected populations as well as obese parts of populations.</p> <p>The most effective way to impact water use and efficiency is at the production and post-harvest stages , enhancing farm water management in both rainfed and irrigated systems , as well as ensuring postharvest and food processing are using best measures to retain nutrition in food.</p> <p>Currently, smallholder farmers with high yield gaps are typically under-performing , and could improve water appropriation significantly per unit harvested nutrition.</p>
Main actor(s) concerned or involved in the response proposed	Farmers

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			Briefly mention how this may be the case

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	<i>Classification (**)</i>
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

757. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
758. Breadth: Are there many people affected?	Few		Many	
759. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
760. Impact on Availability				
761. Impact on Access				
762. Impact on Utilization/ nutrition				
763. Impact on Stability				
764. Impact on most vulnerable people	Specify as appropriate			
765. Impact on women				
766. Impact on children				
767. Impact on marginalized populations	Specify as appropriate			
768. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**6. Linkages with SDGs (1 to 17)<sup>64</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>64</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



**HLPE Inquiry**  
**Critical and Emerging Issues for Food Security and**  
**Nutrition**  
**Questionnaire**  
**(Please fill a separate form for each issue identified)**

About the respondent

Name, Surname and Institution	<b>Steven Were Omamo, Deputy Director, Policy and Programme Division, World Food Programme (WFP)</b>	
Do you answer on behalf of your institution, or as an individual?	On behalf	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	Rome, Italy International Development Agency	

1. Overview of the issue

Issue in 2 lines	<i>K33A Policy reforms and institutional innovations that catalyse and sustain pro-smallholder systemic change in food systems</i>		
Description of the issue in less than 5 lines	Smallholder farmers face major structural and institutional hurdles to market participation. Demand-side approaches featuring public/institutional food procurement have the potential to overcome some of these hurdles by changing and aligning incentives for actors at different levels of food systems. But such approaches must be carefully articulated, with strong support and participation from governments.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box		<u><b>Opportunity</b></u>	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Case study of design and implementation of the Purchase for Progress (P4P <sup>65</sup> ) initiative in Burkina Faso, Ethiopia, Rwanda and South Sudan using a two-pronged framework that integrates analysis of factors driving systemic change (policy and regulatory reform, institutional innovation, financial inclusion, and public-private partnerships) with analysis of attributes of systemic change (adoption and adaptation, scale and expansion, sustainability, and resilience and response)		

<sup>65</sup> P4P was launched in September 2008, with the aim to test the potential of using WFP's significant procurement demand to catalyze partnerships that address the constraints of smallholder farmers' sustainable access to remunerative markets. The programme was piloted in 20 countries in Africa, Central America and Asia (<https://www.wfp.org/purchase-progress>).

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Main response proposed to address the issue	The Purchase for Progress (P4P) initiative was launched in September 2008 and now covers 35 countries in Africa, Asia, and Latin America. The rationale behind P4P is to link WFP's demand and that from other buyers (including government) for staple food commodities with the technical expertise of a wide range of partners. This collaboration provides smallholders with the skills and knowledge to improve their agricultural production, and an incentive to do so, as they have an assured market in which to sell their surplus crops. By boosting smallholders' agricultural production and increasing their access to markets, P4P aims to contribute to poverty reduction and, in doing so, is addressing the root causes of hunger. While the end-goal is to connect smallholders to sustainable markets beyond WFP, the natural inroads for P4P was to focus on commodities procured for WFP food baskets, including those for school feeding programmes, namely cereals and pulses.
Main actor(s) concerned or involved in the response proposed	WFP, national governments, farmer organizations/cooperatives, private banks, and a range of supply-side partners (private sector, research institutions, development agencies such as FAO and IFAD)

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<b>External driver</b>	<b>Internal to food systems</b>	<b>Both</b>
Is the issue either or both?		<b>X</b>	Briefly mention how this may be the case

(*)	<b>Economic (and productive)</b>	<b>Social (and Cultural)</b>	<b>Environmental (resources, etc.)</b>	<b>Governance (institutions, rights, etc.)</b>	<b>Other (SPECIFY)</b>
Main nature of the issue	<b>X</b>			<b>X</b>	
Nature of the main impact of the issue on FSN	<b>X</b>			<b>X</b>	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

Governance – as represented in policy reforms, institutional innovations, financial inclusion, and public-private partnerships – drives incentives facing smallholders and other market actors leading to choices that have strong implications for economic outcomes at several levels (see examples below)

## 3. Attributes of the Issue

	<b>Classification (**)</b>
769. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	<b>Systemic issue</b>
770. Breadth: Are there many people affected?	<b>Many</b>

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771. Scale: local/national/regional/global?		National	Regional	Global
		<i>Ethiopia, Rwanda, Burkina, Malawi, S. Sudan</i>	<i>Africa</i>	

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
 Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

772. Impact on Availability	++	
773. Impact on Access	++	
774. Impact on Utilization/ nutrition	+	
775. Impact on Stability	+	
776. Impact on most vulnerable people	++	
777. Impact on women	++	
778. Impact on children	+	
779. Impact on marginalized populations	++	
780. Cost to address the issue		Middle

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

As shown above (question 1) and detailed below in the examples, the P4P demand-side approach to smallholder market support catalyzes changes in the policy and regulatory environment, key institutions, financial systems, and public-private relations that contribute to better functioning of food systems in ways that have direct and indirect impacts on prospects for smallholder market engagement.

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X		
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

Evidence from the P4P pilot indicates that key impacts can occur in the short term as defined here. See examples below.

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## 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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- Analysis identified the **adoption, adaptation and replication/scaling** of the P4P type model (or elements of) by the government institutions and other stakeholders.
- Solid evidence of changes in Government policies and regulations; and establishing new institutions, aligned with key elements of the P4P model, which favours procurement from smallholders (see examples below)

## 6. Linkages with SDGs (1 to 17)<sup>66</sup>

Linked to the SDG2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

- Target 2.4: By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.

## 7. The case being, linkages with any other issue

Target 2.3: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

## 8. Additional Supporting Information

### Supporting Information:

- *Reflections on the P4P Pilot. WFP*
- *Catalyzing Systemic Changes in Support of Smallholder Farmers Market Participation – Forthcoming from WFP*
- *Systemic Food Assistance: Fighting Hunger through a Food Systems Approach. Draft Background Paper for a Food Systems Strategy for WFP – Forthcoming from WFP*
- *P4P Fact Sheets*
- *P4P Stories From the Field*

<sup>66</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



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## Evidence

In each of the four case study countries, analysis indicates that P4P generated systemic changes in the food system through<sup>67</sup>:

### Policy and regulatory environment

Ethiopia	Quality Standard Regulation – mandatory Aflatoxin testing for maize grains and maize-based processed food
Rwanda	Ministerial order – to purchase 40% of food for National Grain Reserve from SHF
Burkina Faso	Legislation – to purchase at least 30% of food/staples for National Food Security Reserve from SHF
Malawi	Operationalization of the warehouse Receipt Act
South Sudan	legislation/regulation for quality control of staples/cereals

### Institution building/strengthening and innovation

Ethiopia	Creation of the Maize Alliance Forum (MAF) & the Agriculture Commercialization Cluster (ACC)
Rwanda	Creation of the Rwanda Grain and Cereal Corporation (RGCC)
Burkina Faso	Stakeholder and partner's consultation forum & Direction of Agricultural Marketing Facilitation (AMF)
Malawi	Genetic Modified Organism and Quality Control (GMO) Unit
South Sudan	Strengthening the capacity of the Agricultural Commodity Exchange (ACE) and the National Food Reserve (NFR).

### Financial Inclusion

Ethiopia	Commercial Bank of Ethiopia institutionalized the forward delivery contract as collateral for credit
Rwanda	Kenyan Commercial Bank (KCB) partnering with cooperatives - using WRS as collateral for credit
Burkina Faso	FCPB and the ECOBANK- provide credit to SHF and FOs using WRS as collateral for credit
Malawi	P4P partnered with Agricultural Commodity Exchange for Africa (ACE) - using WRS as collateral for credit
South Sudan	<i>Crop advance</i> – a credit line up to USD 10,000 for aggregation before payments (i.e., while waiting for payments)

### Business Environment and Public-Private Partnerships

Ethiopia	PPPs through the <i>Maize Alliance</i>
Rwanda	PPPs to provide services to farmers – fumigation, transportation, etc.
Burkina Faso	Participatory planning & decision making <i>through the stakeholder and partner's consultation forum</i>
Malawi	Private sector as service providers and market agents
South Sudan	Private sector as service providers and market agents

<sup>67</sup> Documentation to support each of these changes is available.

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*Knowledge gaps*

*References*

- Nippard et al. 2014. Adopt-Adapt-Expand-Respond: a framework for managing and measuring systemic change processes. Springfield Centre.
- Osorio-Cortes et al. 2013. Monitoring and Measuring Change: The Systemic M&E Principles in the Context of the Kenya Market Assistance Program. SEEP Network.

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## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Ann Waters-Bayer, Prolinnova International Support Team c/o Royal Tropical Institute (KIT) Amsterdam, Netherlands		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being			

### 1. Overview of the issue

Issue <i>in 2 lines</i>	K34A Small-scale farmer innovation		
Description of the issue <i>in less than 5 lines</i>			
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>			

Main response proposed to address the issue	
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Main actor(s) concerned or involved in the response proposed

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
781. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
782. Breadth: Are there many people affected?	Few		Many	
783. Scale: local/national/regional/global?	Local	National	Regional	Global
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
784. Impact on Availability				
785. Impact on Access				
786. Impact on Utilization/nutrition				
787. Impact on Stability				

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788.	Impact on most vulnerable people			
789.	Impact on women			
790.	Impact on children			
791.	Impact on marginalized populations			
792.	Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>68</sup>

<sup>68</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs.

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

References

Bäuerliche Innovation / Innovation paysanne / Small-scale farmer innovation under  
***[www.prolinnova.net/content/small-scale-farmer-innovation-dossier](http://www.prolinnova.net/content/small-scale-farmer-innovation-dossier)***

Further attachments:

[http://www.fao.org/fileadmin/user\\_upload/hlpe/hlpe\\_documents/Critical-Emerging-Issues-2016/CEI-2016-K34\\_2016\\_dossier\\_small-scale\\_farmer\\_innovation.pdf](http://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/Critical-Emerging-Issues-2016/CEI-2016-K34_2016_dossier_small-scale_farmer_innovation.pdf)

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	University of Pretoria	
Do you answer on behalf of your institution, or as an individual?	<input checked="" type="checkbox"/> On behalf	<input type="checkbox"/> As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Country of the responding individual/institution Please mention international or regional, the case being	South Africa	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K35A How to translate international FS policy decisions into transversal national policies and governance in countries		
Description of the issue <i>in less than 5 lines</i>	Because food security is so multi-sectoral, coordination, administration and governance of food security policies and programmes is complex and complicated, requiring high level leadership and communication		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<input checked="" type="checkbox"/> Challenge	<input checked="" type="checkbox"/> Opportunity	<input type="checkbox"/> It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Research at our University with regard to food security and nutrition policy change and governance indicates that countries face significant problems in translating a large body of knowledge, policy options and international agreements and obligations into transversal policy reform at national and sub-national levels in coordinated and consolidated ways that ensure efficient use of resources and sound governance and accountability .		

Main response proposed to address the issue	<p>More directed guidance for national governments to use in drafting and implementing national food security and nutrition plans that take into account the various related commitments. Such tools should include:</p> <ul style="list-style-type: none"> <li>• Guidance on governance structures for oversight of food security,</li> <li>• Development of policy frameworks for food security and nutrition that consider existing commitments and obligations,</li> <li>• Design and implementation of programmes to address food security and nutrition at various levels as well as</li> </ul>
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	<ul style="list-style-type: none"> <li>A concise set of food security indicators.</li> </ul>
Main actor(s) concerned or involved in the response proposed	CFS Governments and regional bodies Research Institutions Communities

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		X	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
793. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		X Systemic issue	
794. Breadth: Are there many people affected?	Few		X Many	
795. Scale: local/national/regional/global?	Local	National	Regional	X Global
	X Communitie s across the world	X All countries	X All regions	



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For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

796. Impact on Availability	--		
797. Impact on Access	--		
798. Impact on Utilization/ nutrition	--		
799. Impact on Stability	--		
800. Impact on most vulnerable people	--		
801. Impact on women	--		
802. Impact on children	--		
803. Impact on marginalized populations	--		
804. Cost to address the issue	Low	X Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X		
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	X Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>69</sup>

<sup>69</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

1, 2, 3, 8, 9, 12, 13, 14, 15 and 16.

## **7. The case being, linkages with any other issue**

Without comprehensive policies and strong institutions to coordinate and manage food security at the national and sub-national levels, governments and states are unlikely to make significant and rapid progress towards the SDGs. As we know well, food security is a complex concept, requiring a comprehensive policy framework and leadership coordination that creates coherence in policy and actions across multiple sectors and levels.

## **8. Additional Supporting Information**

### *Additional information*

The concept of food security is iterative and our understanding of its complexities unfold with increasing insight into the interactions of the multiple causes and the impact of these on the lives of people across the globe. One critical consideration for future food security is how to keep government officials up to date with a diverse range of new policy insights and developments in the international arena amidst very strong competing competition for their time (and budgets).

The development of the core definition of food security can be traced back to global food system shocks – from the post WW2 conceptualisation focused on increasing food supply, to the inclusion of access elements in the 1980s following major famines in Africa, to including the utilisation component related to the rise of human rights in the early 1990s and the stability that more recently includes resilience element in response to increasing awareness of the impact of conflict and migration on food security. Post the 2007/8 high food price crisis, there has been increasing attention to first under-nutrition and now to malnutrition in all its forms.

Each new systemic shock to global food security leads to more complexity with regard to food security policy. Each shock leads to shifts in governance elements at both the global and local levels. This is very evident in the era following the 2007/8 food price crisis.

A number of successful policy instruments have emerged post the global crisis, including the establishment of the HLPE to provide evidence-based analysis and guidance to the CFS and countries. The HLPE reports attempt to bring together a comprehensive framework for national food security policy that integrates various binding and non-binding international agreements, treaties, conventions and declarations on a specific topic. The rigor, independence and convergence that the HLPE reports bring to the global debate is unique.

Increasingly the reports are being used by national governments in preparing for CFS meeting and national discussion on each topic. But the body of wisdom and guidance is mounting up on separate issues.

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and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

*Evidence*

For me, the most critical issue in ensuring future sustainable FSN and SD is how to get these multiple issues mainstreamed in national policy, M&E and creating the institutional architecture to create continual policy review, reform and implementation.

The complexity emerges through the discussions and deliberations of the HLPE in trying to document and bring convergence in terms of the wide range of such international instruments related to human rights, sector-specific elements such as marine and fisheries regulatory frameworks, and the multiplicity of others related to children health, water, sanitation, trade, labour etc. But it is rare to have similar dialogues in-country.

Although SDG calls 2 us to: “End hunger, achieve food security, improve nutrition and promote sustainable agriculture”, unpacking this and the other 16 SDGs reveals major challenges for FS unless sound governance structures are established. The reason for this is that achieving all 17 SDGs depends on food security and food security is dependent on the elements in each of the SDGs.

The Global Strategic Framework creates a mirror for the CFS to remind members of current debates and decisions. Documentation of this nature is essential at the continental/regional, national and district levels to ensure coherence and the progressive realisation of commitments and translation of these into strategic objectives.

But how do we ensure that food security is not crowded out by the multiplicity of other policy priorities? While human rights and the rights of children are clearly established in various Conventions that are ratified by governments, we do not have the same rigor in FS as in Human Rights, WTO, WHO, WHA and other UN bodies.

We have seen that integrating food security elements into WTO policy debates is tricky. It was only in 2011 that the Doha Round agreed to include a programme of work on food security. The debates on Special Safeguard Mechanism are still fierce.

The Global Nutrition Report 2016 estimated that 12 of the 17 SDGs included nutrition-related indicators. Due to considerable and concerted effort by the nutrition community, internationally recognised and established nutrition indicators have been included in the metrics for measuring achievement with the SDGs. Apart from nutrition-related indicators, only one direct measure of food security is included in the list of indicators – the Food Insecurity Experience Scale.

The discipline of the health sector also leads to very structured guidance for countries regarding critical and emerging policy issues. In a recent application of a new theoretical tool for testing the drivers of policy change with regard to food security, my colleagues and I see a very clear and strong influence of evidence, dissemination of authoritative science-based evidence (including Lancet series documents), consultation and focusing events feeding into WHO and WHA fora that lead to binding and non-binding agreements, guidance on implementation and targets. This is quickly taken up in national policies where local evidence leads to recognition of a problem.

So for example, in recent iterations of African policy documents at continental and national levels you see the the 6 WHA nutrition targets and their measures being integrated into transversal M&E systems. But often at the neglect of the broader components of food security – especially elements relating to access and stability.

The independence and sharp focus of HLPE reports provides a unique more practical opportunity to translate a large body of knowledge, policy options and institutional guidance for translating international agreements and obligations into transversal policy reform at national and sub-national levels.

Multiple SDG indicators refer to the number of countries with:

- legal frameworks are in place to promote, enforce and monitor or guarantee ...
- Administrative units have established and operational policies and procedures
- Implemented well-managed migration policies and urban and regional development plans
- Adopted and implemented local disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030a
- National and local disaster risk reduction strategies
- Sustainable consumption and production (SCP) national action plans or SCP mainstreamed as a priority or a target into national policies
- Communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication,

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biennial update report or other)

- Communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions
- Progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in the United Nations Convention on the Law of the Sea, for the conservation and sustainable use of the oceans and their resources
- Mechanisms in place to enhance policy coherence of sustainable development
- Use of country-owned results frameworks and planning tools by providers of development cooperation

The multiplicity of the SGD process poses a threat to losing sight of the importance of SD for food security and vice versa.

*Knowledge gaps*

*References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	University of Pretoria	
Do you answer on behalf of your institution, or as an individual?	<input checked="" type="checkbox"/> On behalf	<input type="checkbox"/> As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Country of the responding individual/institution Please mention international or regional, the case being	South Africa	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K35B Biosecurity and antibiotic resistance		
Description of the issue <i>in less than 5 lines</i>	Outbreaks of contagious plant and animal diseases can affect the food security, health and livelihoods of millions of people. Antibiotic resistance seeks to erode many of the gains of the past decades in containing the spread of such diseases		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<input checked="" type="checkbox"/> Challenge	<input type="checkbox"/> Opportunity	<input type="checkbox"/> It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Research in epidemiology and antimicrobial resistance at our University raises this as a serious threat to food security, human, animal and plant health and livelihoods of farmers. Some of these diseases are lethal and fast spreading others go undetected but have long-term health implications. They affect trade opportunities. Breaches in biosecurity can have serious consequences for entire regions.		
Main response proposed to address the issue	Identification of key threats per region, development of risk registers at local, national and regional levels and research to support rapid detection of disease, treatments and vaccines that are resilient; and contain and prevent the spread of disease. Early warning systems, contingency planning and disaster management plans.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

Governments and regional bodies  
Research Institutions  
Communities

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		X	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Disease outbreaks affect each of these elements.

## 3. Attributes of the Issue

	Classification (**)			
805. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		X Systemic issue	
806. Breadth: Are there many people affected?	Few		X Many	
807. Scale: local/national/regional/global?	Local	National	Regional	X Global
	X Communitie s across the world	X All countries	X All regions	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

808. Impact on Availability	--
809. Impact on Access	--
810. Impact on Utilization/ nutrition	--

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

811. Impact on Stability	--		
812. Impact on most vulnerable people	(-- ) The poor will be affected more in terms of a disease outbreak – both in terms of production, consumption and incomes.		
813. Impact on women	--		
814. Impact on children	--		
815. Impact on marginalized populations	(--) these people will not have resources to cope or recover from loss		
816. Cost to address the issue	Low	Middle	X High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	X Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>70</sup>

<sup>70</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

1, 2, 3, 8, 9, 12, 13, 14 and 15

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	University of Pretoria	
Do you answer on behalf of your institution, or as an individual?	<input checked="" type="checkbox"/> On behalf	<input type="checkbox"/> As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Country of the responding individual/institution Please mention international or regional, the case being	South Africa	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K35C Indigenous resources		
Description of the issue <i>in less than 5 lines</i>	With climate change and rapidly increasing incidences of malnutrition, we need to identify nutrient-rich food sources that can provide essential nutrition in culturally celebrated ways to ensure future food security, nutrition and health		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<input checked="" type="checkbox"/> Challenge	<input checked="" type="checkbox"/> Opportunity	<input type="checkbox"/> It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Research in food security and food processing at our University has identified the need for increased consumption of nutrient-rich foods to ensure future food security, nutrition and health. Culture plays an important part in consumption of foods. Indigenous foods provide an opportunity to increase nutrient intakes but challenges exist in domesticating production, scaling up production, marketing acceptable foods and dealing with elements such as anti-nutrients that affect the absorption of other nutrients.		
Main response proposed to address the issue	Mapping and identification of priority crops for further research and product development.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

Governments  
Private sector  
Research Institutions  
Communities

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		X	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X		
Nature of the main impact of the issue on FSN	X	X	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
817. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		X Systemic issue	
818. Breadth: Are there many people affected?	Few		X Many	
819. Scale: local/national/regional/global?	Local	National	Regional	X Global
	X Communities across the world	X All countries	X All regions	

For items 4-11 below, please use the classification [ — —, —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

820. Impact on Availability	++
821. Impact on Access	++
822. Impact on Utilization/ nutrition	++
823. Impact on Stability	++

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

824.	Impact on most vulnerable people	++		
825.	Impact on women	++		
826.	Impact on children	++		
827.	Impact on marginalized populations	++		
828.	Cost to address the issue	Low	X Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	X Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>71</sup>

**1, 2, 3, 8, 9, 12, 13**

<sup>71</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*



## Enquête du Groupe d'experts de haut niveau (HLPE) Questions cruciales et émergentes pour la sécurité alimentaire et la nutrition

### Questionnaire

#### Renseignements concernant le contributeur

Nom, prénom et institution	Nicolas BRICAS, Cirad	
Répondez-vous au nom de votre institution ou à titre privé?	Au nom du Cirad	
Acceptez-vous que cette contribution soit mise à la disposition du public dans le cadre des actes de la consultation?	Oui	
Pays de la personne ou de l'institution qui répond. Veuillez mentionner, le cas échéant, «international» ou «régional».	France mais le Cirad est un centre de coopération internationale	

#### 1. Aperçu de la question/du phénomène

Énoncé en 2 lignes.	K36A Rôle du secteur agro-alimentaire (SAA) dans la sécurité alimentaire et nutritionnelle (SAN)		
Description en moins de 5 lignes.	Le secteur de la transformation, du stockage, de la commercialisation, de la logistique, de la distribution, de la restauration joue, par plusieurs leviers, un rôle important sur la SAN. Or ce secteur est en pleine mutation sans que l'on mesure bien les conséquences de ces changements sur la SAN		
La question/le phénomène est-il un <i>défi</i> et/ou une <i>opportunité</i> pour la sécurité alimentaire et la nutrition? Veuillez cocher la case appropriée.	Défi	Opportunité	La mutation du SAA constitue à la fois un risque et une opportunité pour la SAN.
Méthode et approche utilisées pour déterminer la question/le phénomène et évaluer son importance pour la sécurité et la nutrition.  En moins de 10 lignes. Des informations complémentaires ou descriptives (publications, rapports, rapports d'experts, analyses, etc.) peuvent être fournies dans la section 5 ci-dessous.	Il existe une littérature fragmentée sur les enjeux du SAA sur différents déterminants de la SAN mais pas de synthèse sur la question.		
Principale action proposée pour résoudre le problème (ou saisir l'opportunité).	Réaliser une synthèse sur les différents rôles du SAA sur la SAN et sur les enjeux de sa mutation.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

Principal(aux) acteur(s) concerné(s) ou participant à l'action proposée.	Opérateurs et entreprises de la transformation, du stockage, de la commercialisation, de la logistique, de la distribution, de la restauration. Pouvoirs publics nationaux et collectivités locales concernés par ce secteur
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*Les champs suivants sont facultatifs pour l'enquête publique*

## 2. Typologie élargie de la question/du phénomène

(*)	Facteur déterminant externe	Interne aux systèmes alimentaires	Les deux
Le phénomène est-t-il l'un, l'autre ou les deux?		Le SAA et un des composant essentiels des systèmes alimentaires, nettement moins étudié que le secteur de la production agricole.	Expliquez brièvement

(*)	Économique (et productive)	Sociale et culturelle	Gouvernance (institutions, droits, etc.)	Environnemental (ressources, etc.)	Autre PRÉCISER
Nature du phénomène	Industrialisation rapide	Standardisation	Rôle moteur du secteur privé	Industrialisation	
Nature de l'impact du phénomène sur la sécurité alimentaire et la nutrition	Risque sur les emplois Effets mal connus sur les pertes post-récolte	Pertes de diversité culturelle ?	Marginalisation des petits opérateurs dans les politiques alimentaires	Effets mal connus sur consommation énergie fossile. Effets sur biodiversité	

(\*) Veuillez cocher les cases. Des informations complémentaires ou descriptives (publications, rapports, rapports d'experts, analyses, etc.) peuvent être fournies dans la section 6 ci-dessous.

## 3. Attributs du phénomène

	Classification (**)		
829. Étendue: Est-il pertinent pour les systèmes alimentaires et nutritionnels dans leur ensemble ou pour des parties spécifiques de ces systèmes?	Aval des filières		Mais rôle d'entraînement sur l'ensemble du système alimentaire
830. Portée: Combien de personnes touche-t-il?			Beaucoup d'emplois directs et indirects
831. Échelle: locale/régionale/mondiale?	Locale		Mondiale
	Lié à l'urbanisation		

Pour les points 4 à 11 ci-dessous, veuillez utiliser l'échelle [ — — , — , 0, +, ++]:

Impact très négatif (— —) / négatif (—) / faible (0) / positif (+) / très positif (++)

832. Impact sur la disponibilité	Oui via pertes post-récolte
833. Impact sur l'accès	Oui via les prix des aliments
834. Impact sur l'utilisation/la nutrition	Oui via qualité nutritionnelle et sanitaire

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	des aliments		
835. Impact sur la stabilité	Oui via la conservation des aliments que la transfo permet		
836. Impact sur les personnes les plus vulnérables	Oui, les femmes, principales actrices du SAA à petites échelles		
837. Impact sur les femmes	Oui		
838. Impact sur les enfants	Pas directement		
839. Impact sur les populations marginalisées	Risques de marginalisation d'activités sous l'effet d'une industrialisation rapide		
840. Coût de la résolution du problème (ou pour saisir l'opportunité)	Faible	Moyen	Élevé

(\*\*) Veuillez cocher les cases ou classer les impacts et fournir des données synthétiques si besoin est. Des informations complémentaires ou descriptives peuvent être fournies dans la section 6 ci-dessous.

#### 4. Période

<i>Horizon (*)</i>	<i>Actuellement/ À court terme (1-5 ans)</i>	<i>À moyen terme (5-10 ans)</i>	<i>À long terme (10-20 ans ou plus)</i>
Moment où le phénomène aura un impact	Dans les pays où l'industrialisation est déjà avancée	Dans les pays où elle commence	
Moment où il faudra intervenir pour traiter la question			

(\*) Veuillez cocher les cases. Des informations complémentaires ou descriptives (publications, rapports, rapports d'experts, analyses, etc.) peuvent être fournies dans la section 6 ci-dessous.

#### 5. Degré de confiance

Solidité de la base de connaissances actuellement disponible	Faible	Moyenne	Élevée
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#### 6. Informations complémentaires

*Informations complémentaires*

*Éléments probants*

*Lacunes en matière de connaissances*

*Bibliographie*

ESNOUF C., RUSSEL M. et BRICAS N. (Eds) 2011. **Pour une alimentation durable. Réflexion stratégique duALIne.** Paris, Editions Quae, 288 p. [[Ouvrage en pdf](#)]

ESNOUF C., RUSSEL M. & BRICAS N. (Eds), 2013. **Food System Sustainability. Insight from DuALIne.** Cambridge University Press. 312 p.

BRICAS N. et BROUTIN C., 2008. Les micro-activités agro-alimentaires et commerciales et la réduction de la pauvreté en Afrique sub-saharienne. *In*: 1st Conference of the Geneva Trade & Development Forum (GTDF), Crans-Montana, Switzerland, 17-20 septembre, 21 p. [[Texte intégral](#)]

BRICAS N. and BROUTIN C., 2008. Food processing and retail micro-activities and poverty reduction in sub-Saharan Africa . *In*: 1st Conference of the Geneva Trade & Development Forum (GTDF), Crans-Montana, Switzerland, 17-20 september, 18 p. [[Full text](#)]

BROUTIN C. et BRICAS N., 2006. **Agroalimentaire et lutte contre la pauvreté en Afrique subsaharienne; le rôle des micro et petites entreprises.** Paris, Ed. du Gret, 128 p.





## Enquête du Groupe d'experts de haut niveau (HLPE) Questions cruciales et émergentes pour la sécurité alimentaire et la nutrition

### Questionnaire

#### Renseignements concernant le contributeur

Nom, prénom et institution	Nicolas Bricas, Cirad	
Répondez-vous au nom de votre institution ou à titre privé?	Au nom du Cirad	
Acceptez-vous que cette contribution soit mise à la disposition du public dans le cadre des actes de la consultation?	Oui	
Pays de la personne ou de l'institution qui répond. Veuillez mentionner, le cas échéant, «international» ou «régional».	France mais le Cirad est un centre de coopération internationale	

#### 1. Aperçu de la question/du phénomène

Énoncé en 2 lignes.	K36B A quelles conditions la sécurisation sanitaire des aliments contribue à l'amélioration de la sécurité alimentaire et nutritionnelle (SAN) ?		
Description en moins de 5 lignes.	La population pauvre, notamment en ville, consomme souvent des aliments de qualité sanitaire insuffisante avec des effets importants sur la nutrition et la santé. Mais les conditions de la sécurisation sanitaire des aliments, et notamment les rythmes de mise en œuvre de normes de qualité, impactent fortement l'évolution des formes de production agricole et de transformation agro-alimentaire, menaçant potentiellement les débouchés et certaines activités des petits opérateurs agricole et agro-alimentaire.		
La question/le phénomène est-il un <i>défi</i> et/ou une <i>opportunité</i> pour la sécurité alimentaire et la nutrition? Veuillez cocher la case appropriée.	Défi	Opportunité	A la fois risque et opportunité
Méthode et approche utilisées pour déterminer la question/le phénomène et évaluer son importance pour la sécurité et la nutrition.  <i>En moins de 10 lignes.</i> Des informations complémentaires ou descriptives (publications, rapports, rapports d'experts, analyses, etc.) peuvent être fournies dans la section 5 ci-dessous.	Eclairer les controverses sur les risques pour l'emploi et les revenus des petits opérateurs agricole et agro-alimentaire des interventions et politiques de sécurisation sanitaire des aliments. Développer des analyses sur les rythmes de sécurisation sanitaire et de leurs effets sur la capacité d'adaptation des petits opérateurs agricole et agro-alimentaire.		
Principale action proposée pour résoudre le problème (ou saisir l'opportunité).	Adapter les rythmes de mise en place de normes de qualité sanitaire des aliments à la capacité d'évolution du secteur agricole et agro-alimentaire pour limiter les risques de marginalisation et favoriser les effets d'entraînement.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Principal(aux) acteur(s) concerné(s) ou participant à l'action proposée.

Pouvoirs publics en charge du contrôle et de la législation sur la qualité sanitaire.  
Opérateurs privés des secteurs agricole et agro-alimentaires.

*Les champs suivants sont facultatifs pour l'enquête publique*

## 2. Typologie élargie de la question/du phénomène

(*)	Facteur déterminant externe	Interne aux systèmes alimentaires	Les deux
Le phénomène est-t-il l'un, l'autre ou les deux?		Evolution de la réglementation et des normes de qualité sanitaire des aliments	Expliquez brièvement

(*)	Économique (et productive)	Sociale et culturelle	Gouvernance (institutions, droits, etc.)	Environnemental (ressources, etc.)	Autre PRÉCISER
Nature du phénomène	Normalisation et réglementation				
Nature de l'impact du phénomène sur la sécurité alimentaire et la nutrition	Amélioration de la santé des consommateurs Risque de marginalisation des petits opérateurs				

(\*) Veuillez cocher les cases. Des informations complémentaires ou descriptives (publications, rapports, rapports d'experts, analyses, etc.) peuvent être fournies dans la section 6 ci-dessous.

## 3. Attributs du phénomène

		Classification (**)	
841.	Étendue: Est-il pertinent pour les systèmes alimentaires et nutritionnels dans leur ensemble ou pour des parties spécifiques de ces systèmes?	Qualité sanitaire des aliments	Question systémique car la QSA est un facteur déterminant de la nutrition.
842.	Portée: Combien de personnes touche-t-il?		Beaucoup
843.	Échelle: locale/régionale/mondiale?		Mondiale
<p>Pour les points 4 à 11 ci-dessous, veuillez utiliser l'échelle [ — — , —, 0, +, ++]: Impact très négatif (— —) / négatif (—) / faible (0) / positif (+) / très positif (++)</p>			
844.	Impact sur la disponibilité	0	
845.	Impact sur l'accès	Oui si sécurisation sanitaire impacte les prix	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

846.	Impact sur l'utilisation/la nutrition	++
847.	Impact sur la stabilité	0
848.	Impact sur les personnes les plus vulnérables	Les populations pauvres sont les plus exposées aux risques sanitaires
849.	Impact sur les femmes	0
850.	Impact sur les enfants	++
851.	Impact sur les populations marginalisées	?
852.	Coût de la résolution du problème (ou pour saisir l'opportunité)	<div>Faible</div> <div>Moyen</div> <div>Élevé</div>

(\*\*) Veuillez cocher les cases ou classer les impacts et fournir des données synthétiques si besoin est. Des informations complémentaires ou descriptives peuvent être fournies dans la section 6 ci-dessous.

#### 4. Période

Horizon (*)	Actuellement/ À court terme (1-5 ans)	À moyen terme (5-10 ans)	À long terme (10-20 ans ou plus)
Moment où le phénomène aura un impact			
Moment où il faudra intervenir pour traiter la question			

(\*) Veuillez cocher les cases. Des informations complémentaires ou descriptives (publications, rapports, rapports d'experts, analyses, etc.) peuvent être fournies dans la section 6 ci-dessous.

#### 5. Degré de confiance

Solidité de la base de connaissances actuellement disponible	Faible	Moyenne	Élevée
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#### 6. Informations complémentaires

##### Informations complémentaires

Il y a d'un côté besoin d'améliorer la qualité sanitaire des aliments pour les populations les plus pauvres et vulnérables car l'insécurité sanitaire est un facteur très important de la nutrition, notamment des enfants.

Mais les conditions de cette sécurisation font courir des risques pour les petits opérateurs de la production agricole et des filières agro-alimentaires si la réglementation ou la normalisation s'effectue à un rythme trop rapide pour qu'ils aient le temps de s'adapter à ces contraintes.

La sécurisation sanitaire est un levier important de l'industrialisation du secteur agro-alimentaire. C'est en son nom notamment que s'implantent les supermarchés et que s'industrialise la transformation, au risque, si elles sont trop rapides, de marginaliser les petits opérateurs.

##### Éléments probants

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Lacunes en matière de connaissances*

Certains auteurs comme Swinnen, mais plutôt sur les marchés à l'exportation, défendent la thèse que les standards de qualité imposés aux petits producteurs ont plutôt des effets d'entraînement positifs sur l'évolution de leurs activités. Cette thèse est controversée par d'autres auteurs montrant des effets de marginalisation.

*Bibliographie*

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<https://www.afd.fr/webdav/site/afd/shared/PUBLICATIONS/RECHERCHE/Archives/Notes-et-documents/49-notes-documents.pdf>

DAVIRON B. & VAGNERON I., 2008. Market Access for Small farmers : the new standard challenge. *In* : G.Kochendörfer-Lucius. and B.Pleskovic (Eds) Agriculture and Development. The World Bank, Washington D.C., Inwent, pp. 41-48.

Parmi de nombreux articles de Tom Reardon sur la question :

T Reardon, JM Codron, L Busch, J Bingen, C Harris, 2000. Global change in agrifood grades and standards: agribusiness strategic responses in developing countries - The International Food and Agribusiness Management Review, 2(3-4) : 421-435



## Enquête du Groupe d'experts de haut niveau (HLPE) Questions cruciales et émergentes pour la sécurité alimentaire et la nutrition

### Questionnaire

#### Renseignements concernant le contributeur

Nom, prénom et institution	Nicolas Bricas, Cirad	
Répondez-vous au nom de votre institution ou à titre privé?	Au nom du Cirad	
Acceptez-vous que cette contribution soit mise à la disposition du public dans le cadre des actes de la consultation?	Oui	
Pays de la personne ou de l'institution qui répond. Veuillez mentionner, le cas échéant, «international» ou «régional».	France mais le Cirad est un centre de coopération internationale	

#### 1. Aperçu de la question/du phénomène

Énoncé en 2 lignes.	K36C Gouvernance de la sécurité alimentaire et nutritionnelle par les régions urbaines		
Description en moins de 5 lignes.	Un nouveau type d'acteur émerge depuis quelques années dans le champ de la gouvernance de la sécurité alimentaire et nutritionnelle : les collectivités locales des villes et des régions urbaines. Elles construisent des politiques alimentaires locales, souvent alternatives, s'appuyant sur leurs ressources foncières, leur maîtrise de la restauration scolaire, les formes d'urbanisme qu'elles orientent.		
La question/le phénomène est-il un <i>défi</i> et/ou une <i>opportunité</i> pour la sécurité alimentaire et la nutrition? Veuillez cocher la case appropriée.		Opportunité	
Méthode et approche utilisées pour déterminer la question/le phénomène et évaluer son importance pour la sécurité et la nutrition.  <i>En moins de 10 lignes.</i> Des informations complémentaires ou descriptives (publications, rapports, rapports d'experts, analyses, etc.) peuvent être fournies dans la section 5 ci-dessous.	Les organisations internationales « Cités et Gouvernements Locaux Unis » (CGLU) et l'Organisation des Régions Unies (ORU-Fogar) fédèrent les initiatives de ces collectivités, notamment sur la sécurité alimentaire et nutritionnelle.		
Principale action proposée pour résoudre le problème (ou saisir l'opportunité).	Mieux tenir compte du rôle de ces collectivités locales dans les débats internationaux sur la SAN.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Principal(aux) acteur(s) concerné(s) ou participant à l'action proposée.	Municipalités, régions fédérées au sein de CGLU et de l'ORU-Fogar
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*Les champs suivants sont facultatifs pour l'enquête publique*

## 2. Typologie élargie de la question/du phénomène

(*)	Facteur déterminant externe	Interne aux systèmes alimentaires	Les deux
Le phénomène est-t-il l'un, l'autre ou les deux?	Ces acteurs n'ont pas pour origine le système alimentaire, mais en deviennent un acteur important		Expliquez brièvement

(*)	Économique (et productive)	Sociale et culturelle	Gouvernance (institutions, droits, etc.)	Environnemental (ressources, etc.)	Autre PRÉCISER
Nature du phénomène			Emergence de nouveaux acteurs		
Nature de l'impact du phénomène sur la sécurité alimentaire et la nutrition			Nouvelles formes de gouvernance, plus participatives et plus intersectorielles qu'à l'échelle nationale		

(\*) Veuillez cocher les cases. Des informations complémentaires ou descriptives (publications, rapports, rapports d'experts, analyses, etc.) peuvent être fournies dans la section 6 ci-dessous.

## 3. Attributs du phénomène

	Classification (**)		
853. Étendue: Est-il pertinent pour les systèmes alimentaires et nutritionnels dans leur ensemble ou pour des parties spécifiques de ces systèmes?	Point critique		Question systémique
854. Portée: Combien de personnes touche-t-il?	Peu		Beaucoup
855. Échelle: locale/régionale/mondiale?	Locale	Régionale	Phénomène mondial
	Nombreuses villes du Monde	Nombreuses régions du Monde	
Pour les points 4 à 11 ci-dessous, veuillez utiliser l'échelle [ — — , —, 0, +, ++]: Impact très négatif (— —) / négatif (—) / faible (0) / positif (+) / très positif (++)			
856. Impact sur la disponibilité			
857. Impact sur l'accès	Filets de sécurité des collectivités locales		

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858.	Impact sur l'utilisation/la nutrition	Via les cantines scolaires		
859.	Impact sur la stabilité			
860.	Impact sur les personnes les plus vulnérables	Via les filets de sécurité		
861.	Impact sur les femmes			
862.	Impact sur les enfants	Via les cantines scolaires		
863.	Impact sur les populations marginalisées	Le cas échéant précisez		
864.	Coût de la résolution du problème (ou pour saisir l'opportunité)	Faible	Moyen	Élevé

(\*\*) Veuillez cocher les cases ou classer les impacts et fournir des données synthétiques si besoin est. Des informations complémentaires ou descriptives peuvent être fournies dans la section 6 ci-dessous.

#### 4. Période

<i>Horizon (*)</i>	<i>Actuellement/ À court terme (1-5 ans)</i>	<i>À moyen terme (5-10 ans)</i>	<i>À long terme (10-20 ans ou plus)</i>
Moment où le phénomène aura un impact			
Moment où il faudra intervenir pour traiter la question			

(\*) Veuillez cocher les cases. Des informations complémentaires ou descriptives (publications, rapports, rapports d'experts, analyses, etc.) peuvent être fournies dans la section 6 ci-dessous.

#### 5. Degré de confiance

Solidité de la base de connaissances actuellement disponible	Faible	Moyenne	Élevée
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#### 6. Informations complémentaires

*Informations complémentaires*

<http://www.regionsunies-fogar.org/index.php?act=14>

*Éléments probants*

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Lacunes en matière de connaissances*

*Bibliographie*





## Enquête du Groupe d'experts de haut niveau (HLPE) Questions cruciales et émergentes pour la sécurité alimentaire et la nutrition

### Questionnaire

#### Renseignements concernant le contributeur

Nom, prénom et institution	BRICAS Nicolas, CIRAD	
Répondez-vous au nom de votre institution ou à titre privé?	Au nom du Cirad	
Acceptez-vous que cette contribution soit mise à la disposition du public dans le cadre des actes de la consultation?	Oui	
Pays de la personne ou de l'institution qui répond. Veuillez mentionner, le cas échéant, «international» ou «régional».	France mais le Cirad est un centre de coopération internationale	

#### 1. Aperçu de la question/du phénomène

Énoncé en 2 lignes.	K36D Quelles politiques pour les stocks de sécurité alimentaires ?		
Description en moins de 5 lignes.	Dans le nouveaux contexte de marchés alimentaires internationaux plus tendus et d'accroissement du risque climatique, la question des stocks de sécurité alimentaire ré-émerge. Elle fait controverse sur ses modalités et des risques de distorsion de marché : stockage privé ou public, centralisé ou non, modes de gouvernance, etc.		
La question/le phénomène est-il un <i>défi</i> et/ou une <i>opportunité</i> pour la sécurité alimentaire et la nutrition? Veuillez cocher la case appropriée.	Défi	Opportunité	
Méthode et approche utilisées pour déterminer la question/le phénomène et évaluer son importance pour la sécurité et la nutrition.  <i>En moins de 10 lignes.</i> Des informations complémentaires ou descriptives (publications, rapports, rapports d'experts, analyses, etc.) peuvent être fournies dans la section 5 ci-dessous.	Besoin d'un éclairage des décideurs politiques sur l'état du débat et des expériences. Typiquement rôle du HLPE!		
Principale action proposée pour résoudre le problème (ou saisir l'opportunité).	Faire une synthèse sur les avantages et risques pour la sécurité alimentaire et nutritionnelle de différents scénarios de stockage de sécurité.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Principal(aux) acteur(s) concerné(s) ou participant à l'action proposée.

Experts des stocks de sécurité et de leur gestion politique.  
Décideurs politiques

*Les champs suivants sont facultatifs pour l'enquête publique*

## 2. Typologie élargie de la question/du phénomène

(*)	Facteur déterminant externe	Interne aux systèmes alimentaires	Les deux
Le phénomène est-t-il l'un, l'autre ou les deux?	Les formes de stockage de sécurité dépendent en partie du secteur financier, externe au système alimentaire	Le stockage est un des éléments du système alimentaire	Expliquez brièvement

(*)	Économique (et productive)	Sociale et culturelle	Gouvernance (institutions, droits, etc.)	Environnemental (ressources, etc.)	Autre PRÉCISER
Nature du phénomène	x		x		
Nature de l'impact du phénomène sur la sécurité alimentaire et la nutrition	Organisation et coût du stockage		Gouvernance et régulation du stockage		

(\*) Veuillez cocher les cases. Des informations complémentaires ou descriptives (publications, rapports, rapports d'experts, analyses, etc.) peuvent être fournies dans la section 6 ci-dessous.

## 3. Attributs du phénomène

	Classification (**)		
865. Étendue: Est-il pertinent pour les systèmes alimentaires et nutritionnels dans leur ensemble ou pour des parties spécifiques de ces systèmes?	Point critique		Question systémique
866. Portée: Combien de personnes touche-t-il?	Peu		Beaucoup
867. Échelle: locale/régionale/mondiale?	Locale	Régionale	Besoin de régulation globale
	Existe à l'échelle locale	Existe à l'échelle régionale	
Pour les points 4 à 11 ci-dessous, veuillez utiliser l'échelle [ — — , — , 0, +, ++]: Impact très négatif (— —) / négatif (—) / faible (0) / positif (+) / très positif (++)			
868. Impact sur la disponibilité	++		
869. Impact sur l'accès			
870. Impact sur l'utilisation/la nutrition			
871. Impact sur la stabilité	++		

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872.	Impact sur les personnes les plus vulnérables	+		
873.	Impact sur les femmes			
874.	Impact sur les enfants			
875.	Impact sur les populations marginalisées	Le cas échéant précisez		
876.	Coût de la résolution du problème (ou pour saisir l'opportunité)	Faible	Moyen	Élevé

(\*\*) Veuillez cocher les cases ou classer les impacts et fournir des données synthétiques si besoin est. Des informations complémentaires ou descriptives peuvent être fournies dans la section 6 ci-dessous.

#### 4. Période

<i>Horizon (*)</i>	<i>Actuellement/ À court terme (1-5 ans)</i>	<i>À moyen terme (5-10 ans)</i>	<i>À long terme (10-20 ans ou plus)</i>
Moment où le phénomène aura un impact			
Moment où il faudra intervenir pour traiter la question			

(\*) Veuillez cocher les cases. Des informations complémentaires ou descriptives (publications, rapports, rapports d'experts, analyses, etc.) peuvent être fournies dans la section 6 ci-dessous.

#### 5. Degré de confiance

Solidité de la base de connaissances actuellement disponible	Faible	Moyenne	Élevée
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#### 6. Informations complémentaires

*Informations complémentaires*

*Éléments probants*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Lacunes en matière de connaissances*

*Bibliographie*

Littérature très abondante et controversée sur le sujet.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Etienne Hainzelin CIRAD	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being	International	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K36E Power (un)balance between different food systems actors and drivers		
Description of the issue <i>in less than 5 lines</i>	Food systems components (production, transformation and distribution systems, consumers' behaviors, regulatory corpus, etc.) are shaped by diverse and opposing groups of interest. How harnessing this power unbalance could improve SAN?		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	Challenge X	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<ul style="list-style-type: none"> <li>- The first step would be to check if conceptual frameworks from social, political or management sciences could applied to food systems component.</li> <li>- Case studies approach would then illustrate the issue with analysis of power unbalance either between actors from different value chain steps (vertical), or between actors from the same family (horizontal)</li> <li>- This question should clearly be addressed in different contexts and at different scales</li> </ul>		
Main response proposed to address the issue			

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

The issue involves all the actors of the chain value from production to consumers

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X		X	
Nature of the main impact of the issue on FSN	X	X		X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
877. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue
878. Breadth: Are there many people affected?	Few			Many
879. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
880. Impact on Availability	- or + depending on the region			
881. Impact on Access	++			
882. Impact on Utilization/ nutrition	+			
883. Impact on Stability				

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

884. Impact on most vulnerable people	Through food prices		
885. Impact on women			
886. Impact on children			
887. Impact on marginalized populations	Specify as appropriate		
888. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>72</sup>

<sup>72</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
Clear link with SDG 2 but also on SDG 1, 8 and 12, because of challenge of jobs, income and inequalities in food systems. What is at stake is measuring the performance of food systems giving priorities to criteria linked to a better distribution of the created value along the chains, and a better food access for the poorer

#### **7. The case being, linkages with any other issue**

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Etienne Hainzelin CIRAD	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being	International	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K36F What is the cost of dependency in terms of food and nutrition security?</i>		
Description of the issue <i>in less than 5 lines</i>	Actors of the Food systems at local scale are frequently facing diverse dependencies (technological, financial,...). What is the cost of these dependencies for producers and consumers in terms of SAN? How this cost can be mitigated?		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge X	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<ul style="list-style-type: none"> <li>- The first step would be to check if conceptual frameworks and metrics from social, political or management sciences could applied to dependency measurement.</li> <li>- This cost analysis should be applied separately to producers (dependency to technology, to credit, to far away markets, ...) and consumers (dependency to food distribution network, to social networks, ...). It should encompass also the impact of this dependency on the actors' capacity to adapt to shocks.</li> </ul>		
Main response proposed to address the issue			

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

- farmers facing market actors, inputs sellers, etc.
- consumers facing distribution systems, etc.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X		X	
Nature of the main impact of the issue on FSN	X	X		X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
889. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue
890. Breadth: Are there many people affected?	Few			Many
891. Scale: local/national/regional/global?	<b>Local</b>	National	Regional	Global
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — — , — , 0 , + , ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

892. Impact on Availability	- or + depending on the region
893. Impact on Access	++
894. Impact on Utilization/ nutrition	
895. Impact on Stability	+

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

896.	Impact on most vulnerable people	Through food prices and through capacity to adapt		
897.	Impact on women	++		
898.	Impact on children	++		
899.	Impact on marginalized populations	Specify as appropriate		
900.	Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>73</sup>

<sup>73</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
Clear link with SDG 2 and SDG 1

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization (FAO) of the United Nations		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International organization		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37A Migration is part of development and when well managed has positive impacts on food security.</i>		
Description of the issue <i>in less than 5 lines</i>	Food insecurity and malnutrition are among the root causes of distress rural-out migration. Agriculture and rural development can play a key role in harnessing the development potential of migration for better food security and nutrition.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	Challenge	Opportunity	<b>It depends</b> (it can be both a challenge and an opportunity)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	The relation between migration, food security and nutrition is complex and context-specific. More evidence is therefore necessary on migration (including also seasonal/cyclical migration) as a critical food security strategy; as well as of the positive and negative impacts of migration and remittances on food and nutrition security of migrants, their families in areas of origin and host communities (see Section 8).		

Main response proposed to address the issue	In its Strategic Framework, FAO has renewed its commitment to work on migration issues. In particular, FAO supports countries to enhance their capacity in reducing distress migration and promoting migration patterns that contribute to improve food security and reduce rural poverty. Building on its strong technical expertise and close relation with governments and agricultural stakeholders, FAO is committed to work with its partners to:
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	<ul style="list-style-type: none"> <li>▪ Generate evidence about the impact of labour migration and remittances on food security and rural livelihoods.</li> <li>▪ Support institutional capacities to deal with large movements of refugees and migrants from an agriculture and rural point of view.</li> <li>▪ Disseminate the lessons learned and the best practices found for scaling up innovative solutions.</li> <li>▪ Facilitate policy dialogue and coordination across governments and rural stakeholders to enhance policy coherence and better incorporate migration into agriculture, food security and rural development policies and programmes.</li> <li>▪ Strengthen partnerships and advocacy for addressing the root causes of migration and enhance its positive contribution to food security and poverty reduction.</li> </ul>
Main actor(s) concerned or involved in the response proposed	<p>FAO is taking a lead role in promoting the positive impacts of migration and reducing its trade-offs. Effective partnerships, dialogue and collaboration should be fostered to enhance the benefits of migration to achieve food security and reduce rural poverty.</p> <p>FAO will expand the work on migration in collaboration with partners. It will engage in particular with other UN agencies, but also with partners from the private sector and civil society, to develop specific programmes:</p> <ul style="list-style-type: none"> <li>▪ <b>IOM:</b> Collaboration is being pursued with IOM three priority areas: understanding migration flows and the nexus with agriculture; addressing migration, agriculture and rural development, and strengthening resilience.</li> <li>▪ <b>World Bank:</b> FAO is exploring the possibility to work with the World Bank and KNOMAD to carry out analysis on migration dynamics and impacts on agriculture and rural development.</li> <li>▪ <b>IFAD:</b> FAO envisages strengthening its collaboration with IFAD on favouring innovative financial instruments to support the channeling of remittances towards productive activities in the agricultural sector and to support entrepreneurship development in rural areas, especially for women and youth.</li> <li>▪ <b>ILO:</b> Together with the ILO, FAO promotes good practices in terms of seasonal migration schemes for rural workers. FAO and ILO would further work together to raise the awareness of Governments, local authorities and communities on the need to promote decent work for migrants, for instance by providing migrant workers with pre-departure information about their rights and potential risks and mechanism to extend coverage of social protection.</li> </ul>

*For the public inquiry fields below are optional*

Replies to the questionnaire are expected by 6 October 2016 by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			<b>External:</b> Migration and remittances are external drivers that can have both positive and negative impacts on food security and nutrition. <b>Internal:</b> Food insecurity and malnutrition can be drivers of rural out-migration; sustainable food systems should therefore be promoted to prevent distress migration.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Food insecurity is one of the root causes of distress migration. Policy coherence should be improved between migration and food security issues.

## 3. Attributes of the Issue

	Classification (**)			
901. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue
902. Breadth: Are there many people affected?	Few			Many
903. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
904. Impact on Availability	+			
905. Impact on Access	++			
906. Impact on Utilization/ nutrition	+/-			
907. Impact on Stability	++			
908. Impact on most vulnerable people	Youth ++			

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909. Impact on women	++		
910. Impact on children	++		
911. Impact on marginalized populations	Migrants ++		
912. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Distress migration of rural youth can have impacts (positive or negative) on the four dimensions of food security: – access, availability, utilization, stability (See Section 8).

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Food insecurity and malnutrition are already main drivers of distress rural out-migration. Food security should therefore be promoted in high migration-prone areas. Migrants are already sending remittances to their hometowns which should be used to promote food security and better nutrition.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Existing evidence shows that migration can have both positive and negative impacts on food security and migration. More evidence is needed to analyse migration dynamics and understand how migration can be harnessed to achieve food security and address the root causes of distress migration.



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## 6. Linkages with SDGs (1 to 17)<sup>74</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs. Migration is represented in several targets on the SDGs, and in particular in SDG target 10.7 that calls for “well-managed migration policies”. Migration is also relevant to achieve SDG 8, which specifically refers to decent work. In rural areas, lack of productive and quality employment often results in poverty and distress migration. Safe, regular and orderly migration can contribute also to SDG 1, “End poverty in all its forms everywhere”, and to SDG 2, “End hunger, achieve food security and improve nutrition and promote sustainable agriculture”.

## 7. The case being, linkages with any other issue

Agriculture and rural development can address the root causes of migration. Investing in sustainable rural development, climate change adaptation and resilient rural livelihoods is an important part of the global response to the current migration challenge.

## 8. Additional Supporting Information

### *Additional information*

Migration out of rural areas can have impacts (positive or negative) on the main pillars of food security – access, availability, utilization, stability.

**Food Availability (physical)** – through changes in the agricultural production and productivity in rural areas of origin.

- Positive impacts: less pressure on land and water resources; technology and knowledge transfer (especially in the case of return migration); utilisation of remittances to hire new labourers, adopt new technologies, purchase inputs, diversify crop production and invest in land.
- Negative impacts: reduced availability of labour force in agriculture (often of youth, the most productive section of the labour force); departure of skilled migrants; abandonment of agricultural activities by youth in the medium-long term, and decreased availability of cultivable agricultural land.

**Access (economic/physical)** – through variations in income, labour allocation and employment opportunities.

- Positive impacts: increase in household income and household’s ability to access important nutritional inputs like more and better food and health- and hygiene-related services; more efficient allocation of rural labour and higher wages; creation of innovative employment opportunities and possibility to access to education and entrepreneurial training; use of remittances for investments in agriculture, rural development and natural resource management and mobilisation of diaspora groups in favour of employment promotion and enterprise development.
- Negative impacts: increased work burden for women and other family members left behind, who can have less access to credit, extension and markets; rise in inflation and inequality at community level, due to remittances.

**Utilization** – through changes in consumption and diet.

- Positive impacts: better food knowledge, associated with increased income (including from remittances), which improve food consumption expenditure and allow an adequate diet; individual and social remittances used to increase access to education, which is likely to increase the awareness on the quality and nutrient characteristics of food.
- Negative impacts: adoption of unsustainable food consumption patterns, due to exposure to

<sup>74</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/> and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

different, not necessarily better, dietary habits coupled with a reduction in the time available for food preparation; increased work burden and family responsibilities, associated with increased energy intake needs which cannot always be satisfied.

**Stability (continuity of food supply)** – through changes in household's resilience and diversification of their livelihoods basis.

- Positive impacts: counter-cyclical role of remittances; livelihood diversification and increased access to different job opportunities, which, combined with remittances, can provide households with insurance and increased ability to ensure stable access to food seasonally or at time of crises; networks facilitating increasing access to urban and rural markets for rural products and for rural population.
- Negative impacts: remittance dependency.

### *Evidence*

As societies and economies undergo structural transformations, the movement of people among and within countries is inevitable. Migration and income diversification are vital to the livelihoods, and thus resilience, of many rural households. Migration is not simply a means for individuals to escape poor living conditions, but often a household strategy. For many poor households, migration of one or more family members is a strategic decision geared towards minimizing risk and diversifying the household's income by seeking more gainful and productive employment opportunities<sup>75</sup>. Agriculture and rural development can make a strong contribution to meeting the global challenge of addressing large movements of refugees and migrants.

Rural populations are changing. In many parts of the world, rural populations are ageing rapidly; often faster than in urban areas, in part because of migration of young adults to cities or abroad. In the past 50 years, 800 million people have moved from rural areas into cities. There are an estimated 244 million international migrants worldwide, about half of them moving from one developing country to another, typically a neighbouring country and many from rural areas. Precise estimates are lacking, but the number of people moving from one rural area to another within the same country is believed to be even higher. This type of migration is usually seasonal, as people move to take advantage of different seasonal patterns of farm production in different locations or to find non-farm jobs in the slack season. Return migration (urban to rural) is less frequent, but where it occurs it is in areas with good infrastructure and road connections and where there is ample off-farm rural employment.

In developing country contexts, migration is often triggered by poverty, food insecurity, inequality, lack of income generating opportunities, lack of access to social protection, climate change and environmental degradation. By migrating, people may be able to escape such conditions, reduce pressure on resources in the places they leave behind, and add resources by sending remittances to family back home. But there are also downsides, as mostly the younger and often also better-educated adults migrate, depriving areas of skills and crucial labour.

Evidence indeed shows that migration and remittances have both positive and negative impacts on rural development, poverty reduction, and food security and nutrition. Such impacts vary widely according to context and the nature of migration taking place. Negative impacts in rural areas are generally the consequence of losses of human capital and of agricultural labour, which may affect crop production and food availability, particularly when families are unable to hire new labourers. Migration of young men has raised particular concerns with respect to the ageing and feminisation of rural populations and the increased work burdens on those left behind. Migration may also accelerate the shift away from agriculture, especially of youth who do not perceive farming as a productive occupation.

There is conflicting evidence on the real contribution of remittances to poverty alleviation, when money is not used for productive investments but rather for (wasteful) consumption. There are also concerns in terms of increased inequality between remittance recipient households and non-recipient households. In some countries, international remittances are contributing to changes in land use patterns and titling as migrants (or their families back home) invest in land leading to conversion of

<sup>75</sup> Massey, D.S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A. and Taylor, J.E. (1993). Theories of International Migration: A Review and Appraisal. *Population and Development Review*, 19(3), pp. 431-66

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(peri-urban) agricultural land to land for housing development.

Remittances can make up for those negative effects, but this is no guaranteed outcome. International remittance flows to developing countries have increased massively to over \$400 billion per year (more than three times to the total sum of official development assistance). For some countries, it constitutes the major source of foreign exchange income. Around 30 to 40 per cent of total remittances go to rural areas, where they can make a much greater impact than in urban areas. Limited access to formal finance and credit is deemed as one of the major constraints to rural employment and entrepreneurship development. Remittances therefore play a crucial, supplementary, role in providing liquidity to rural households. While there are no precise estimates, remittance flows from domestic migrants also are perceived to be substantial because of the sheer amount of migrants, though the impact on incomes of recipient households tends to be less than when receiving remittances from a family member abroad. Internal migrants often are temporary and seasonal migrants with precarious employment conditions and unstable wages, hence the part of the income they remit or bring back home is also less stable and therefore less conducive to investments in the farm.

Recipient households typically spend most of the income from remittances (up to 90 per cent) on primary needs, that is, to buy food, improve their homes, or pay for the cost of the education of the children. Only a very small part is invested in rural areas. Remittances do relax credit and liquidity constraints and help to repay debts and avoid households having to sell off assets (a plough or a cow) during times of stress and shock. Not much is known about the impact of remittances, but available evidence suggests it may depend on the type of migration.

Migration can also contribute to reduce unemployment and underemployment, for instance through seasonal migration during the lean season, as well as reducing demographic pressure and resource constraints. Migration and remittances can also be a driver of social change. Increased female migration and control over resources by women who receive remittances can lead to important changes in gender power relations. The engagement of diaspora groups can also bring collective gains, improving public infrastructure and market linkages, as well as education, health and care services.

While forming a formidable source of income, the potential of remittances to improve rural livelihoods remains largely untapped. Financial innovations that help lower transaction costs for migrants to send money back home are helpful to enhance benefits for recipient households, but by themselves there are no guarantees they will also induce more investment in agriculture and rural livelihoods. In general, evidence shows that investments in agriculture are usually made in high potential areas, where land and irrigation water are available and investments can be more profitable.

For rural areas in low and middle-income transit countries, migration and protracted forced displacement can constitute a challenge for local authorities to provide quality public services for the migrant and host populations and can, amongst other things, further strain natural resources, increasing pressure on agriculture- and fisheries-based livelihoods.

#### *Knowledge gaps*

The increasing interest and concern on migration at global and country level calls for informed decisions based on reliable and sound data and information. There are major evidence gaps regarding rural out-migration trends and its determinants, particularly related to distress migration. It is thus essential to generate more evidence regarding the dynamics of rural migration, as well as different strategies to prevent distress migration and the pathways to harness the developmental potential of migrants.

Comprehensive sex- and age disaggregated data on the determinants, dynamics and consequences of migration on rural areas are not readily available for all countries. Migration and labour force surveys often do not adequately cover rural areas, seasonal work and agriculture-based livelihoods, leading to a paucity of data in terms of internal migration and domestic remittances, including their use and impacts on agriculture and rural areas. Evidence gaps also exist in terms of the extent and impact of climate change and environmental-related migration, as well as of the different rural seasonal out-migration patterns.

In order to support more informed policymaking, it is necessary to address the knowledge, data and evidence gaps related to internal and international migration flows, the links between migration and agricultural and rural development, as well as between human mobility and food security. Obtaining necessary data may in some cases involve adding questions to national census. There is also scope to

explore data to better match labour supply and demand (thus further improving skills and jobs matching at domestic and international levels). There is a need for increased evidence on the effects of migration flows on agriculture and rural development and the role of agricultural development in reducing rural out-migration. With a greater understanding of these issues, policy-makers will be better equipped to address them in national sectoral policies and regional processes.

There should be more attention to the links between international and internal movements. Rural out-migration is often internal, as poor people lack the financial resources and skills to migrate internationally. It is widely acknowledged that international and internal movements are closely linked, even if the implications of these linkages have not been sufficiently explored.

More attention is needed on the rural youth employment challenge, as many migrants are very young and to the gender dimensions of migration and rural development. Migration impacts on gender relations, and female migration can be a driver of social change, increasing women's economic and social empowerment. On the other hand, migration can also increase the work burdens of those left behind and reduce time for household work and childcare

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization (FAO) of the United Nations		
Do you answer on behalf of your institution, or as an individual?	On behalf of FAO		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International organization		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37B Impacts of Climate Change on long-term patterns of capture fish production</i>		
Description of the issue <i>in less than 5 lines</i>	Climate change will differentially affect the production and composition of marine fisheries, both in terms of species dominance but also geographical production patterns. Highly dependent tropical regions are likely to be worse affected, and thus their food security threatened.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	Both
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Areas with changes in species composition or seasonality of catches need proper adaptation systems to minimize impacts. Areas where production may decline need assistance to ensure trade or alternative protein production is in place to avoid food insecurity. As changes, and thus impacts, can be place specific so need adaptation solutions.		
Main response proposed to address the issue	There is a need to generate more spatially and temporally resolved data on impacts, followed by substantial case studies of adaptations needed to secure food. These adaptations range from institutional and governance, managerial and technological, trade and markets, and even behavioural at community and country level.		

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Main actor(s) concerned or involved in the response proposed

Ministries of environment and fisheries/agriculture  
Regional and national management institutions  
Local communities  
Fish producers/ processors/ markets  
Research institutions  
Civil society

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	Climate Change Habitat degradation	Unsustainable fishing, fishing sector practices (habitat, gear, seasonality), market and consumption preferences,	By adapting to expected changes challenges can become opportunities

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue			X		
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: The main issue is environmental-driven changes, but the impacts cut across all sectors

## 3. Attributes of the Issue

	Classification (**)			
913. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
914. Breadth: Are there many people affected?				Many
915. Scale: local/national/regional/global?		National	Regional	Global
		X	X	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

916. Impact on Availability	Globally, unsure but regionally both Negative in low latitudes (- -) and Positive (+) in high latitudes
917. Impact on Access	Globally, unsure but regionally both Negative in low latitudes (- -) and Positive (+) in high latitudes



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918.	Impact on Utilization/ nutrition	Negative in low latitudes ( - - ) and Positive ( + ) in high latitudes		
919.	Impact on Stability	--		
920.	Impact on most vulnerable people	--		
921.	Impact on women	--		
922.	Impact on children	--		
923.	Impact on marginalized populations	--		
924.	Cost to address the issue	High		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		X	X
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

Adaptations take time to design and implement, so they need to be in place before the impact is at its maximum

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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Generic patterns are known and well supported, but detailed geographical and temporal impacts are still unresolved

#### 6. Linkages with SDGs (1 to 17)<sup>76</sup>

<sup>76</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 2: Zero Hunger

SDG 14: Life below water

**7. The case being, linkages with any other issue**

To support a sustainable fishery sector is essential in order to ensure food security and nutrition for todays and future generations. By improving the use of existing fisheries resources, more food could be made available without increasing the pressure on the resources.

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*



*References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization (FAO) of the United Nations		
Do you answer on behalf of your institution, or as an individual?	FAO		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	International organization		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37C Closing the gender gap in agriculture to eradicate hunger and poverty</i>		
Description of the issue <i>in less than 5 lines</i>	Providing women with equal access to and control to productive resources such as land, water, inputs, training, advisory services, and decision-making produces significant development advances in agriculture, lifting millions out food insecurity.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity x	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Past experience and available data show that reducing gender inequalities can significantly increase agriculture productivity and efficiency of policy and project interventions. The SOFA 2011 estimated that by providing women the with same access to productive resources as men, they could increase their yields by 20-30%, which would raise total agricultural output in developing countries by 2.5-4%, and reduce number of hungry people in the world by 12-17%.		
Main response proposed to address the issue	Priority areas for reform include: 1. Eliminate discrimination against women in access to agricultural resources, education, extension, financial services and labour markets; 2. Invest in labour-saving and productivity-enhancing technologies and infrastructure; and 3. Facilitate women's participation in flexible and fair rural labour markets and promote inclusive agrifood systems.		

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Main actor(s) concerned or involved in the response proposed

Policy-makers involved in food security and agriculture policies and investments.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			It implies addressing gender inequalities both inside existing food systems as well as in the socio-economic context.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	Women are less productive due to their unequal control over productive resources and services	Socio-cultural norms and traditions still limit women's productive capacity	Women have less access to natural resources and climate change has specific impacts on men and women	Many countries have poor governance mechanisms that do not take adequately into account gender inequalities	
Nature of the main impact of the issue on FSN	Women are less able to contribute to the household food security and nutrition, due to the lower yields in their agricultural activities. Women and girls represent 60% of undernourished people.	Gender inequalities exacerbate global levels of food insecurity and inadequate nutrition, as they influence food and resource distribution between women and men, in rural and urban areas.	x	x	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further

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observation:

More efforts are needed to address gender inequalities and empower rural women through the development and implementation of gender-responsive policies, strategies, laws and programmes, capacity development activities and production of evidence base for policy-makers.

### 3. Attributes of the Issue

	Classification (**)			
925. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point Governments have made major commitments to revitalize agriculture in developing regions and their efforts will yield better results if they maximize women's productive potential by promoting gender equality.			Systemic issue
926. Breadth: Are there many people affected?	Few			Many 792 million people suffer from chronic hunger and over 2 billion people are affected by malnutrition
927. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global x
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
928. Impact on Availability	++			
929. Impact on Access	++			
930. Impact on Utilization/ nutrition	++			
931. Impact on Stability	++			
932. Impact on most vulnerable people	Specify as appropriate If women farmers had the same access to resources as men, the number of hungry in the world could be reduced by up to 150 million			
933. Impact on women	++			
934. Impact on children	++			
935. Impact on marginalized populations	Specify as appropriate Rural people and female-headed households in particular are among the poorest people and special efforts are needed			
936. Cost to address the issue	Low X	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Among smallholders, farms managed by female-headed households are smaller in most countries for which data are available. Women are less likely to use purchased inputs and mechanical tools and equipment and have less access to information, and therefore are less productive.

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	x	x
Moment to act to address the issue	As soon as possible		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Governments and the international community are committed to address the underlying causes of gender inequalities but many more efforts are still needed to integrate gender equality in the design of policies, strategies and projects, including both short- and long-term interventions.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High X
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There is ample evidence and past experience have shown long-term benefits and impacts on the households and communities produced by closing the gender gap in agriculture and by designing interventions related to food security and nutrition that address both needs of men and women.

#### 6. Linkages with SDGs (1 to 17)<sup>77</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Gender equality is a fundamental cross-cutting component of the SDGs and the Agenda 2030, which fully integrate gender, both as a stand-alone Goal (SDG5 on Gender Equality), and as cross-cutting throughout the SDGs, the targets and the indicators – there are 42 targets aiming to gender equality and women's empowerment across the 17 SDGs. The guiding principle of the 2030 Agenda to “*Leave no one behind*” embraces a strong social dimension to ensure that actions are always and everywhere socially inclusive and just. This commitment drives the call for data disaggregation by gender, age, geography, occupation, and social and ethnic groupings.

<sup>77</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**7. The case being, linkages with any other issue****8. Additional Supporting Information***Additional information**Evidence*

The SOFA 2011 on Women in agriculture has estimated that by closing the gender gap in agriculture would generate significant gains for the agriculture sector and for society. Based on available data, it was estimated that would reduce the number of hungry people in the world by 12-17 percent. The potential gains would vary by region, depending on how many women are currently engaged in agriculture, how much production or land they control, and how wide a gender gap they face in the access to productive resources, services and employment opportunities.

*Knowledge gaps*

Many more efforts are needed to collect, analyze and use sex-disaggregated data related to agriculture and food security to provide the evidence base for policy- and decision-makers.

*References*

FAO 2011. The State of Food and Agriculture (SOFA) 2011. Women in agriculture. Closing the gender gap for development.  
FAO and IFPRI. 2014. Gender in agriculture. Closing the knowledge gap.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization (FAO) of the United Nations		
Do you answer on behalf of your institution, or as an individual?	On behalf of FAO		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International organization		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37D Illegal, Unregulated and Unreported (IUU) fishing</i>		
Description of the issue <i>in less than 5 lines</i>	<p>Illegal, unreported and unregulated (IUU) fishing remains a major global threat to the long-term sustainable management of fisheries and the maintenance of productive and healthy ecosystems as well as to the stable socio-economic condition of many of the world's small-scale and artisanal fishing communities. IUU fishing often targets high-value species in remote areas with ineffective management and control measures. It thrives on weak governance, weak tenure security, poor traceability and lack of deterrents.</p> <p>IUU fishing, estimated at 11 to 26 million tonnes a year, is found in all types and dimensions of fisheries, occurs both on the high seas and in areas under national jurisdiction, concerns all aspects and stages of the exploitation and utilization of fish, and may sometimes be associated with organized crime. This unsustainable practice often leads to the collapse of local fisheries, with small-scale fisheries in developing countries being particularly vulnerable.</p>		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b>Challenge</b>	Opportunity	Both
<p>Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition</p> <p><i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</p>	<p>Reviews of national and regional assessments of fish stocks at the national, regional and global level vis-à-vis reported landings as well as reporting (national and/or regional) on illegal fishing activities in areas within and beyond national jurisdiction.</p> <p>IUU fishing puts pressure on fish stocks, marine wildlife and habitats, and the profitability of fishing;</p>		

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	<p>subverts labor standards; and distorts markets with the consequent result of threatening food security.</p> <p>Moreover, products derived from IUU fishing enter local or overseas trade markets, thus undermining the local fisheries economy, competing with or displacing local communities from legally caught food supplies and threatening the livelihoods of legally operating fishers and other fishery-sector stakeholders.</p>
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Main response proposed to address the issue	<ul style="list-style-type: none"> <li>• Enhancement of the implementation of domestic compliance and enforcement instruments (e.g., by incorporating the UN Fish Stocks Agreement, FAO Compliance Agreement and FAO Code of Conduct principles and measures into domestic legislation);</li> <li>• Provision of adequate resources to adapt and implement existing international legislative and policy frameworks for fisheries at the local, national and regional level to secure political commitment and governance reform based on tenure security and secure access to fisheries resources;</li> <li>• Eradication/elimination of entry into ports of IUU fishing-derived fish and fishery products via the global implementation of the <b>2009 FAO Port State Measures Agreement (PSMA)</b>;</li> <li>• Strengthened bilateral and multilateral cooperation among States and regions, including through the support of Regional Fisheries Bodies (RFBs) and FAO;</li> <li>• Updating and implementation of port State measures and other MCS schemes by a number of regional fisheries management organizations (RFMOs);</li> <li>• Proper implementation of the <b>Voluntary Guidelines on Flag State Performance</b> as a valuable tool for strengthening compliance by flag States with their international duties and obligations regarding the flagging and control of fishing vessels, contributing significantly to combating IUU fishing;</li> <li>• Proper implementation of <b>the Global Record of Fishing Vessels Refrigerated Transport Vessels and Supply Vessels</b>. The main objective of the Global Record is to provide a powerful tool to prevent, deter and eradicate IUU fishing activities, making it more difficult for vessels operating outside the law. The Global Record utilize UVIs to ensure each vessel's record is unique, thus allowing a vessel's history to be traced accurately and making information available regarding the identification of fishing vessels and fishing activity associated with illegal activities and contribute to the implementation of international instruments such as the PSMA.</li> <li>• Use of market-based mechanisms including,</li> </ul>
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	<p><i>inter alia</i>, effective <b>Catch Documentation Schemes and Eco-labelling schemes</b> and the <b>Voluntary Guidelines on the Governance of Tenure of Land, Fisheries and Forests</b>;</p> <ul style="list-style-type: none"> <li>• Proper implementation of the <b>Code of Conduct for Responsible Fisheries</b>. The Code is directed to Members and non-Members of FAO, fishing entities, subregional, regional and global organizations, and all persons concerned with the conservation of fishery resources and management and development of fisheries. The Code provides principles and actions required for implementation of responsible fisheries and aquaculture, addressing general principles, fisheries management, fishing operations, aquaculture development, coastal area management and post-harvest practices and trade;</li> <li>• Proper implementation of the <b>International Plan of Action to prevent, deter and eliminate IUU fishing (IPOA-IUU)</b>. The IPOA-IUU, developed in support of the implementation of the Code, provides possible actions that may be taken to address IUU fishing by States in their capacity as flag State, coastal State, port State and market State. States are called on to develop national plans of action and provides for a central role for RFBs in coordinating efforts;</li> <li>• Proper implementation of the <b>International Plan of Action for the Management of Fishing Capacity (IPOA-Capacity)</b>. The IPOA-Capacity, developed in support of the implementation of the Code, provides actions that States should take to eliminate excessive fishing capacity and thereby reducing the competition and pressure within fisheries that fuels the business decision of whether or not illegal fishing is a viable business model.</li> <li>• Effective use of <b>vessels monitoring system (VMS)</b>. This programme allows for tracking the vessels' position and activity;</li> <li>• To map and assess at the extent the framework and key provisions envisaged in the Code of Conduct have been incorporated into national and regional frameworks FAO promotes increased participation/responses by FAO Members, RFBs and NGOs to the FAO questionnaire on the implementation of the Code of Conduct for responsible Fisheries (<a href="http://www.fao.org/fishery/topic/166326/en">http://www.fao.org/fishery/topic/166326/en</a>).</li> <li>• Political will and capacity of both the RFMOs as a whole, as well as its individual member States for sustainable use and management of the fisheries resources;</li> <li>• Trade policies such as import bans and tariffs could be used to punish countries that fail to meet sustainability standards;</li> <li>• States should act in accordance with the pledge made at the United Nations Conference on Sustainable Development, then echoed in "The</li> </ul>
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	<p>Future we Want”, to abolish subsidies for fuel or boatbuilding to the industrial fishing sector and review all other subsidies to ensure that they contribute to the realization of the right to food, domestically and extraterritorially, in particular for small-scale fishers in developing countries;</p> <ul style="list-style-type: none"> <li>• Need to review fiscal policies in order to phase out subsidies that enhance fishing effort and fishing capacity and to redirect public support measures toward strengthening fisheries management capacities and institutions and avoiding social and economic hardships in the fisheries reform process;</li> <li>• Capacity-building programmes tailored to the needs of the different regions and aimed at human resource development, knowledge transfer and the strengthening of institutional capacity in the field of ocean affairs and the law of the sea, planning, fisheries management and monitoring capacities and enforcement, can play a significant role in improving the contribution of fish to food security and supporting the fight against IUU fishing;</li> <li>• A multifaceted and linked global strategy is needed to ensure sustainable and equitable food security. Linking institutions that deal directly or indirectly with ocean issues across spatial and jurisdictional scales in ways that are efficient and effective, avoiding duplications and conflicts, could be a solution to the problem. National governments can play a key role in addressing these challenges, acting with others through international treaties, including RFMOs/As and other regional mechanisms;</li> <li>• Ensuring access to information on fishing vessels and cargo vessels linked to fishing operations, including their physical characteristics, ownership and flag histories, previous convictions or suspected offences.</li> </ul> <p>*For a comprehensive list of specific actions/measures to address IUU fishing within the jurisdiction of RFBs please see: <a href="http://www.fao.org/docrep/005/Y3274E/y3274e08.htm">http://www.fao.org/docrep/005/Y3274E/y3274e08.htm</a>.</p>
Main actor(s) concerned or involved in the response proposed	Governments, fisheries and aquaculture industry and communities, research, development partners

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
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Is the issue either or both?	X	X	
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(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: The main issue is environmental-driven changes, but the impacts cut across all sectors

### 3. Attributes of the Issue

	<i>Classification (**)</i>			
937. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	<b>This is relevant to the full length of aquatic food production systems (including post harvest), ie from “deck to dish”</b>			
938. Breadth: Are there many people affected?				<b>Many</b>
939. Scale: local/national/regional/global?		National	Regional	<b>Global</b>

For items 4-11 below, please use the classification [ — —, —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

940. Impact on Availability	<i>Availability</i> of fisheries resources will decrease and the level of overexploited stocks increase. <i>Availability</i> of the full profitability of fisheries decreases, increasing pressure for IUU fishing. Very negative (— —).
941. Impact on Access	IUU fishing competes for legal access to fisheries resources, reduces the availability of fisheries resources, and increases costs for legal operators. This has a significant impact on developing countries, both at the national level when unable to address IUU fishing and for the small communities that rely heavily on those resources and have fewer resources as a result. Very negative (— —).
942. Impact on Utilization/ nutrition	<i>Utilization</i> of aquatic products and the nutritional benefits produced will be impacted by changes in range, quantity and quality of supply and reduced opportunities to consume preferred products. This is particularly critical for countries with high per capita fish consumption and in particular the one with limited equally nutrient food. Negative (—)

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943.	Impact on Stability	IUU fishing has negative socio-economic, environmental and social impacts. It shifts direct and indirect revenues from fisheries resources from legal to illegal fishing activities and can create losses of resources, jobs, livelihood, both directly and further downstream. It may jeopardize food security and usually causes conflicts between small scale and industrial fisheries. IUU fishing may be associated with sub-standard working conditions. All these factors negatively impact on regional and national stability. Negative (-)		
944.	Impact on most vulnerable people	As significant coastal inhabitants, fishers and fish-farmers are particularly vulnerable to the direct and indirect impacts of changes in fish stocks and fishing operations. Negative (—)		
945.	Impact on women	IUU fishing may negatively impact the downstream fish processing and local trade in coastal countries where IUU fishing takes place. Women represent the large majority in many countries in fish processing and local trade and are thus at high risk to be negatively affected in their livelihoods.		
946.	Impact on children	IUU fishing and unacceptable conditions of work are frequently related. This also often leads to child labor. Negative (—)		
947.	Impact on marginalized populations	Marginalized populations are more likely to be negatively affected by IUU fishing given their great dependence on fishing as a source of income and food security. This is further exacerbated by the lack of empowerment of these populations.		
948.	Cost to address the issue		Middle	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

#### 5. Degree of confidence

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Solidity of currently available knowledge base.		Middle	
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## **6. Linkages with SDGs (1 to 17)<sup>78</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 2: Zero Hunger

SDG 14: Life below water

## **7. The case being, linkages with any other issue**

To support a sustainable fishery sector is essential in order to ensure food security and nutrition for today's and future generations. By improving the use of existing fisheries resources, more food could be made available without increasing the pressure on the resources.

## **8. Additional Supporting Information**

*Additional information*

<sup>78</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Evidence*

*Knowledge gaps*

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Food and Agriculture Organization (FAO) of the United Nations	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being	International organization	

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37E The rise of aquaculture as the main provider of fish and other aquatic foods</i>		
Description of the issue <i>in less than 5 lines</i>	Aquaculture now produces >50% of all fish eaten. However, there are concerns about accessibility by poor consumers and over the effects of increasing reliance on crop-based feed-stuffs, affecting fat content and composition and micronutrient levels		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	Challenge	Opportunity	Both – aquaculture offers the possibility of making cheaper, safer and more nutritious food, as well as more expensive, less nutritious food
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	More research needs to be done to investigate (a) the business case for farming fish and other aquatic animals that meets the needs of poor consumers, and (b) the effect of diet and feeding regime on nutrient levels of farmed fish and other aquatic products.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	The CFS could commission two technical reviews of the issues with the aim of developing technical guidelines, especially in relation to feeds and feed management. If insufficient information was available to develop technical guidelines
Main actor(s) concerned or involved in the response proposed	National fisheries agencies, those concerned with food security and nutrition policy development, the FAO, CGIAR (WorldFish), research organizations (e.g. Michigan State University)

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	Growing demand for fish and other aquatic foods	Drive to increase productivity; costs and availability of oilseeds and other crop-based feedstuffs; costs and supplies of fishmeal and fish oil	External drivers due to population growth but also increased wealth, perceived health attributes of aquatic animal protein (versus red meat) and urbanization.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Farmers tend to target middle class consumers, who prefer larger (more expensive) fish. Intensification of farmed aquatic food production, combined with finite supplies of increasingly expensive fishmeal and fish oil, are driving increased use of crop-based feedstuffs. Few affordable alternatives yet available.

## 3. Attributes of the Issue

	Classification (**)	
949. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point	Especially poor consumers in countries where aquaculture



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		produce is increasingly consumed.		
950. Breadth: Are there many people affected?	Few			Poor consumers, especially in Asia but in Africa in the future
951. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
952. Impact on Availability	-			
953. Impact on Access	-			
954. Impact on Utilization/ nutrition	-			
955. Impact on Stability	-			
956. Impact on most vulnerable people	- (first 1000 days – women and young children) Specify as appropriate			
957. Impact on women	-			
958. Impact on children	-			
959. Impact on marginalized populations	0 Specify as appropriate			
960. Cost to address the issue	Low			

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
Reviews and development of technical guidelines should be relatively inexpensive. Costs could rise, however, if there is a dearth of knowledge.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	Now		
Moment to act to address the issue	Now		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low		
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**6. Linkages with SDGs (1 to 17)<sup>79</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG2

Also, links with SDG 5, 6, 12 and 14.

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>79</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

*Knowledge gaps**References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization (FAO) of the United Nations		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International organization		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37F Social protection systems to reduce food insecurity, eliminate hunger and combat rural poverty</i>		
Description of the issue <i>in less than 5 lines</i>	Three quarters of the chronically undernourished and those living in poverty reside in rural areas. Many of them are not covered by social protection, and are particularly vulnerable and exposed to multiple risks. Yet, they play a critical role in ensuring global food security in the long term, and in sustainably managing the natural resource base in the most fragile ecosystems. Ensuring their access to social protection is not only a social imperative, but it is critical to ensure their participation as partners in development and economic growth.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Social protection is now recognized in the context of Agenda 2030 as a pillar for poverty reduction, as well as for eliminating hunger and food insecurity. Evidence generated by FAO and partners have shown the role social protection, including cash transfers and school feeding, have on increasing access to more, better quality and diverse food, while enhancing the economic and productive potential of the poorest.		

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<p>Main response proposed to address the issue</p>	<p>As an explicit organizational outcome under Strategic Objective of Reduction of poverty, FAO has recognized social protection as a corporate priority. Social protection is recognized as a strategic approach to reduce poverty and enhance resilience and is a key principle within the CFS-Framework for Action in Protracted Crises. FAO's work on social protection focuses on four inter-linked pillars: (i) Expansion of coverage and scale-up of social protection to rural areas, (ii) Nutrition Sensitive Social Protection, (iii) Social Protection, Agriculture and Natural Resource Management and (iv) Resilience Building through Social Protection.</p> <p>Building on its strong technical expertise and close relation with governments and agricultural stakeholders, FAO is committed to work with its partners to:</p> <ul style="list-style-type: none"> <li>- promoting and supporting policy dialogue at global, regional and country levels, to strengthen the FSN lens of social protection strategies, as well mainstream social protection in FSN and agriculture strategies and investment plans</li> <li>▪ generating and disseminating knowledge and evidence on the contribution of social protection to food security and rural poverty, including strengthening data collection, impact evaluation and operational research to enhance the reach and impact of social protection and its alignment with agriculture;</li> <li>▪ developing capacities at regional and country levels, including of sub-national and community structures, to support the preparation, implementation, monitoring and evaluation of evidence-based policies and programmes;</li> <li>▪ increasing evidence-based advocacy and outreach, to contribute to shaping the emerging global, regional and national agendas on social protection, FSN and agriculture, while raising awareness on the critical role social protection plays in reducing rural poverty and food insecurity; and</li> <li>▪ facilitating strategic partnerships on social protection for FSN, agriculture and rural development between governments, development partners, civil society and the private sector, including south-south collaboration</li> </ul>
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Main actor(s) concerned or involved in the response proposed

FAO works in close partnership with strategic actors working in strengthening the synergies between social protection, FSN and rural poverty. Specifically, FAO works as an active partner of the Social Protection Inter-Agency Coordination Board (SPIAC-B), as well as of the World Bank and ILO-led initiative on Universal Coverage of Social Protection.

Strategic partners include UNICEF, World Bank, WFP, ILO as well as regional bodies such as CELAC, NEPAD, AU and ASEAN.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	Social protection as a key strategy to address economic and social determinants of food insecurity and malnutrition; as well as a strategy to enhance the economic and productive capacity of poorest and food insecure		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Social protection also plays an important role in stimulating resilient and sustainable rural livelihoods and in achieving global goals of hunger eradication, poverty reduction and sustainable natural resources management. Stronger synergies between SP, FSN and rural livelihood promotion is critical to accelerate progress towards poverty reduction and zero hunger.

## 3. Attributes of the Issue

	Classification (**)			
961. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
962. Breadth: Are there many people affected?	Few		Many	
963. Scale: local/national/regional/global?	Local	National	Regional	Global

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	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)			
964. Impact on Availability	+		
965. Impact on Access	++		
966. Impact on Utilization/ nutrition	++		
967. Impact on Stability	++		
968. Impact on most vulnerable people	Poorest and excluded, including those living in rural areas and dependent on natural resources; rural women		
969. Impact on women	+ (gender sensitive social protection, as well as women's economic empowerment when design is sensitive to gender specific vulnerabilities)		
970. Impact on children	++		
971. Impact on marginalized populations	++ Specify as appropriate		
972. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Social protection has impact on all 4 dimensions of food security  
Critical strategy for those living in extreme poor, as well as those that are in process of transforming their livelihoods

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

- Social protection, if predictable and regular, can generate short term impacts in terms of access to food, addressing basic and immediate needs, and enhance risk management capacity
- In a medium term, families can enhance dietary diversity and access to more quality food, while also addressing key market failures affecting rural poor and food insecure such as access to financial markets, enhance productive investments
- In the long-term, social protection enhances human capital accumulation and thus the employability of future generations

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## 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Evidence from Sub-Saharan Africa, Asia and Latin America shows the clear and consistent positive impact of social protection programmes, such as cash transfers, on food quantity and quality and on dietary diversity. Social protection interventions have helped poor rural households to overcome liquidity constraints, while also contributing to alleviate barriers to access credit, savings and other financial services. Evidence is also consistent regarding economic and productive impacts at household level, as well as this evidence has pointed to the role of social protection in stimulating local economic development.

## 6. Linkages with SDGs (1 to 17)<sup>80</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

- Specific- SDG 1.3 (Expansion of coverage of social protection)
- In addition, contributing to SDG1, SDG 8

## 7. The case being, linkages with any other issue

Resilience building- specifically social protection as a strategy to enhance resilience in context of protracted crises, fragile and humanitarian contexts, including in the context of climate change.

## 8. Additional Supporting Information

### *Additional information*

Social protection also plays an important role in stimulating resilient and sustainable rural livelihoods and in achieving FAO's three global goals of hunger eradication, poverty reduction and sustainable natural resources management, by:

- providing direct income and/or productive assets, and supporting income-generating activities, including decent farm and non-farm employment opportunities, to increase impact on individual and household FSN and poverty;
- equipping households with the resources needed to overcome liquidity constraints and cope with market failures, shocks or stresses, thus allow them to invest in their livelihood activities and enable better decision-making and management of risks where insurance and financial

<sup>80</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



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markets are not sufficiently available;

- promoting labor productivity and employability of beneficiaries through impacts on education, health and human capital formation, thus addressing the intergenerational poverty trap and vulnerability to food insecurity;
- stimulating local economic development with positive feedback loops on food consumption, production, employment and poverty reduction; and
- supporting sustainable management of natural resources to strengthen resilient livelihoods.<sup>81</sup>

FAO is significantly contributing to making the economic case for social protection by building the evidence on these five roles and is thus playing a critical role in the global, regional and national social protection agendas.

### *Evidence*

Evidence from Sub-Saharan Africa, Asia and Latin America shows the clear and consistent positive impact of social protection programmes, such as cash transfers, on food quantity and quality and on dietary diversity.

In addition, social protection interventions have helped poor rural households to overcome liquidity constraints, while also contributing to alleviate barriers to access credit, savings and other financial services. The impacts of social protection on education, health and human capital accumulation are well documented. FAO and partners have been contributing to enhancing this evidence base, showing the potential of social protection to address some of the underlying economic causes of malnutrition,<sup>82</sup> as well as to increase labour productivity, long-term employability and labour market participation. Evidence suggests that in areas where livelihoods predominantly depend on agriculture and rural labour markets, social protection has the potential to influence the productive dimension directly. For example cash transfers have shown to increase the use of agricultural inputs, ownership of livestock, and participation in non-farm family enterprises among subsistence and small-scale farmers in Sub-Saharan Africa.

Moreover, this evidence has pointed to the role of social protection in stimulating local economic development: As beneficiaries spend transfers on goods and services, the impacts of cash transfer programmes are being transmitted to providers of these good and services inside and outside the local economy. Cash transfers provide stimulus in the form of increased demand for consumption goods, inputs or assets, and in some cases also increased demand for diversity of goods. These findings are supported by the tendency of people with limited resources to spend locally, and on locally produced rather than imported goods.

### *Knowledge gaps*

Despite the significant impacts of social protection, it is also recognized that social protection by itself will not be enough to move people out of poverty. The 2015 FAO State of Food and Agriculture stresses the need for coordinated multi-sectoral food security and rural development strategies to ensure that social protection and agricultural interventions are made compatible to sustainably move poor rural households out of poverty. Despite a comprehensive body of evidence on the impacts of social protection, there are still gaps with **respect to complementary interventions**, as existing evidence is mainly based on evaluations of single programmes, such as cash transfers and school feeding. FAO is committed to help fill this gap and to promote the evidence-based development and scale-up of integrated social protection approaches.

<sup>81</sup> FAO Council (2013) *FAO's Work in Social Protection*.

<sup>82</sup> Ibid.; Department of Social Development (DSD), South African Social Security Agency (SASSA) and UNICEF (2012) *The South African Child Support Grant Impact Assessment – Evidence from a Survey of Children, Adolescents and their Households*. Pretoria: UNICEF South Africa.

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### References

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HLPE. 2012. *Social Protection for Food Security*. A report by the High Level Panel of Experts (HLPE) on Food Security and Nutrition of the Committee on World Food Security (CFS). Rome (available at <http://www.fao.org/3/a-me422e.pdf>).

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization (FAO) of the United Nations		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International organization		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37G Urbanization, rural transformation and implications for food security and nutrition</i>		
Description of the issue <i>in less than 5 lines</i>	More than 50% of the world's population lives in cities and this figure continues to rise. Rapid urbanization, globalization, increasing income and associated changes in lifestyles and patterns of food consumption are changing the food systems dynamics. What policies are needed to ensure FSN given these changing dynamics?		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<p>The issue is both a challenge (changing dynamics require understanding the effects, e.g. how rural transformation and urbanization affect producers and consumers and what new policy thinking is needed to ensure FSN) and an opportunity (e.g. achieving productivity increase and better integrated food systems to address the urban agenda).</p> <p>Identification of the issue is based on a combination of scientific evidence (call for papers to provide basis to orient FAO future policy work) and identification of good practices (involvement of FAO in Feb. and June 2016 CFS workshops).</p>		

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Main response proposed to address the issue	<p>Includes</p> <ul style="list-style-type: none"> <li>- Governance: multi-level, multi-sectoral and multistakeholder governance with integrated approaches based on territories; involvement of those with a direct stake</li> <li>- Data: collection of data reflecting changing food systems and their dynamics on which to base policy decisions</li> <li>- Consumption patterns and nutrition: understanding changing consumption patterns and the impacts on the achievement of healthy and sustainable diets as a result of rural transformation and urbanization.</li> <li>- Land and natural resources: opportunities for integrated land use, natural resources</li> <li>- Agriculture: facilitation of agricultural production synergies</li> <li>- Labour and mobility: identification of labour generating opportunities on and off-farm</li> <li>- Services, infrastructure and social protection: improving them to respond to needs</li> </ul>
Main actor(s) concerned or involved in the response proposed	<ul style="list-style-type: none"> <li>- All governmental decision makers at all levels in both rural and urban areas</li> <li>- Multisector rather than sector level approaches.</li> <li>- Context specific challenges to structural transformation and urbanization to be addressed (e.g. territorial approaches).</li> <li>- Non-state actors playing key roles in healthcare, value chains, infrastructure, services and education in urban and rural areas</li> <li>- All stakeholders, in particular the most vulnerable to food insecurity and malnutrition</li> </ul>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			The issue is both external (driven by factors that are outside food systems such as security and climate change) and internal (changing e.g. the production and consumption parameters of the food systems)

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	Urbanization and rural transformation are driven by economic	The issue has a social and cultural component, including regarding	Environmental factors are highly relevant (e.g. changing climatic conditions that affect availability	The issue requires broad governance approach (multi-level,	

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	situation and opportunities in other sectors (services, manufacturing and industry) or other areas (urban or rural towns).	human rights, putting them at risk in particular in informal settlements	of water)	multisectoral, multistakeholder)	
Nature of the main impact of the issue on FSN	Has an economic impact in both rural and urban areas	The issue has dramatic social and cultural impact	Urban settlements may considerably affect environmental conditions, especially where there is no provision of sanitation and waste collection	May require changing traditional governance structure	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
973. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				It is relevant to all parts of food and nutrition systems
974. Breadth: Are there many people affected?				Many
975. Scale: local/national/regional/global?	Local	National	Regional	Global
	<i>Each city might require a specific approach</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

976. Impact on Availability	Not clear but could have a positive impact by facilitating agricultural production synergies;
977. Impact on Access	Could lead to identification and enhancement of income generating opportunities from both farm and off-farm activities particularly geared to small producers, women and young people.
978. Impact on Utilization/ nutrition	Not clear but could be positive (access to more diversified foods) for some groups and negative (low access, issues of food safety) for others
979. Impact on Stability	Not clear how the issue will affect production
980. Impact on most vulnerable people	Groups or individuals that face social exclusions for reasons such as gender, age, ethnicity, religion will

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	also tend to be excluded from opportunities afforded by greater access to services and infrastructure, employment/income generating opportunities and access to nutritious food, be it in urban or rural areas.		
981. Impact on women	Inclusive urbanization and rural transformation could potentially lead to more independence for women as a result of greater access to employment opportunities and services.		
982. Impact on children	Children's nutritional status is often correlated with mothers'. As both rural and urban dwellers become more dependent on purchased food, empowerment of women is crucial in meeting household dietary needs.		
983. Impact on marginalized populations	See Point 8 above		
984. Cost to address the issue	No information available		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	It has already an impact and will continue to have it in the medium and long term		
Moment to act to address the issue	Immediately		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low		
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Insufficient knowledge base, data collection systems are not structured to provide appropriate data, in particular on linkages between rural and urban areas. Knowledge at the policy analysis level is also low (both in terms of existing policy and analysis for new policy)

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**6. Linkages with SDGs (1 to 17)<sup>83</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
Links in particular with Goals 1, 2, 11 and 17  
Linkages with the New Urban Agenda-post HABITAT III

**7. The case being, linkages with any other issue**

Linkages with previous HLPE reports and upcoming one on nutrition and food systems

**8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>83</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

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*Knowledge gaps*

*References*



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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization (FAO) of the United Nations	
Do you answer on behalf of your institution, or as an individual?	On behalf	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International organization	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37H Combating land degradation through sustainable land management</i>		
Description of the issue <i>in less than 5 lines</i>	Globally, 33 % of land is moderately to highly degraded. Land degradation (LD) is an impediment for the realization of FAO's overall strategic objective of achieving food security and reducing hunger. However, sustainable land management (SLM) provide promising options to reverse the current trend.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	Challenge	Opportunity	It depends: LD challenges can be addressed by SLM tools and methods. These are opportunities many of which have been developed by FAO
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Various tools and methodologies available to assess the extent and severity of LD at global, national and local level, including at the landscape. The Land Degradation Assessment (LADA) process (of which a project was implemented by FAO) and the LADA-WOCAT toolset ( <a href="http://www.fao.org/nr/lada/">www.fao.org/nr/lada/</a> ) facilitate the establishment of participatory processes with land users and experts for: National and local assessment of LD and existing land management practices; Selection of "best" practices that are well adapted to the local context; Assessment, documentation and sharing through the WOCAT		

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	(World overview of conservation approaches and technologies <a href="http://www.wocat.net/">www.wocat.net/</a> ) global database. This also includes the assessment of the impact on the environment and livelihoods of the local communities.
Main response proposed to address the issue	<p>Promising SLM options are available to reverse LD. An approach suggested to reverse LD trends: by identifying target areas where adaptable SLM options have high potential of success (similarity analysis) coupled with an implementation, mainstreaming and scaling-out program supported by appropriate policies and financial mechanisms.</p> <p>In supporting countries combating LD there are a number of essential inter-linked issues:</p> <ul style="list-style-type: none"> <li>• Conduct assessments of land/natural resource status and trends (degradation, conservation, restoration);</li> <li>• Land resources planning and decision support systems, for SLM implementation from farm to landscape. integrated landscape management (ILM) is used to ensure sustainable management of natural resources;</li> <li>• Monitoring and assessing the impacts and managing knowledge to further inform stakeholders including policymakers in their decision making processes.</li> </ul>
Main actor(s) concerned or involved in the response proposed	<p>At global level: commitment to the SDGs (especially SDG 2, 6 and 15) to ensure land degradation neutrality and sustainable food and agriculture. International donors supporting development programs to enhance wide implementation of SLM.</p> <p>At national level: government and non-government organizations to support SLM mainstreaming, together with land resources planning to foster targeted scaling out of SLM and to provide enabling environment (policies and financial support).</p> <p>At local levels: local institutions and land users/farmers to select and implement proper SLM practices adapted to address specific challenges and backed up by land resources planning to identify suitable SLM for specific biophysical and socio-economic conditions. Capacity development and knowledge sharing are crucial to support the scaling out of introduced SLM practices.</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	Climate change is a cause and an effect of LD. Climate change impacts exacerbate	LD directly affect land and soil productivity; and hence food security and livelihoods, especially in	Briefly mention how this may be the case

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	LD.	rural areas of developing countries.	
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(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue			X	X	
Nature of the main impact of the issue on FSN	X		X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

IPCC AR 5 states that dry areas are expected to expand, increasing the risk for the proper ecosystems functioning, with land resources (soil, water, vegetation) falling; the adaptive capacity and resilience is linked with SLM for LD reduction, lower carbon emissions, Increase biodiversity and water availability.

### 3. Attributes of the Issue

	<i>Classification (**)</i>			
985. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue: SLM addresses the change to the productive systems and the resulting (or derived) policies	
986. Breadth: Are there many people affected?	Few		Many	
987. Scale: local/national/regional/global?	Local <i>Indicate here the precise location: At the farm level in rural areas of developing countries</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i> Mostly in sub-saharan Africa, NENA region, Asia and Latin America	Global; It is a global issue

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

988. Impact on Availability	LD Negative, SLM Positive
989. Impact on Access	Low
990. Impact on Utilization/ nutrition	Low
991. Impact on Stability	LD Negative, SLM Positive
992. Impact on most vulnerable people	LD Very Negative, SLM Positive
993. Impact on women	LD Very Negative, SLM Positive

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994. Impact on children	LD Very Negative, SLM Positive		
995. Impact on marginalized populations	LD Very Negative, SLM Positive		
996. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Among the benefits of linking land (soil, water,...) with FS makes clearer and more effective (science-based) policies when focusing on the vulnerable agro-ecosystems in which rural populations inhabit. Policies need increased research (technically and scientifically addressing LD)

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The impact is continuous if no measure is implemented to reverse the current LD trends. Although these are more severe in already degraded land and vulnerable climatic areas, projections of climate change and population growth pose threats in the rest of agricultural lands, forests and rangelands.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Knowledge is available and, to a large extent documented. However, there are gaps in the access to knowledge and increased research. Therefore, knowledge platforms coupled with proper research and dissemination and mainstreaming are needed.

#### 6. Linkages with SDGs (1 to 17)<sup>84</sup>

<sup>84</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture. Target 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss. Target 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

Related:

Goal 6: Ensure access to water and sanitation for all; Target 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

Goal 13: Take urgent action to combat climate change and its impacts; target1 13.1 and 13.2: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries; and: Integrate climate change measures into national policies, strategies and planning.

#### **7. The case being, linkages with any other issue**

#### **8. Additional Supporting Information**

##### *Additional information*

SLM is a tool for the successful implementation of SDG target 15.3: LDN has two elements: Prevention from degradation of non-degraded land through SLM/SFM practices, including SLM, expressed by: conservation agriculture, agro-forestry, water management and soil conservation. These practices are well documented and proven to be efficient in building resilience of both populations and ecosystems.

Restoration of degraded land, preferably in the same ecosystem and landscape: More than 2 billion hectares of land worldwide are suitable today for rehabilitation through SLM action on forest and landscape restoration. Out of this, 75 percent is best suited for mosaic restoration, where forests and trees can be combined with other land uses, including agroforestry.

##### *Evidence*

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*Knowledge gaps*

Increased coordination and coherence on monitoring the implementation of the SDGs referred to above, with consistent definitions of what is sustainability, what is degradation, what is restoration.. Likewise, the coherent development of baselines that complement each other among the SDG targets is a must.

*References*

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- TerrAfrica, 2009. Country support tool for scaling up SLM in sub-Saharan Africa, prepared by FAO and World Bank and Policy and Financing for SLM prepared by GM, UNCCD Secretariat and FAO.
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- Land Degradation Assessment (LADA [www.fao.org/nr/lada/](http://www.fao.org/nr/lada/));
- TerrAfrica ([www.terrafrica.org](http://www.terrafrica.org)).
- The Transboundary Agro-ecosystem Management Project for the Kagera River Basin (Kagera TAMP) <http://www.fao.org/climate-change/programmes-and-projects/detail/en/c/327628/>.

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization (FAO) of the United Nations		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37I Antimicrobial (AM) resistance (AMR) is a present threat to local and global public health. Trade will likely be affected.</i>		
Description of the issue <i>in less than 5 lines</i>	AM use is needed to preserve life and safeguard health (human and animals), but the misuse and abuse of AM has led to medicines that are no longer effective. AM use in food and agriculture (aquatic and terrestrial animals, feed, crops ...) contributes to the problem.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b>Challenge</b>	Opportunity	The deciding factor will be access to information and technology
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Animal source foods are on the increase, as are crops, to feed a growing global population. Under intensified conditions, the use of AM to protect randomly against poor production practices, or as growth promoters leads to AMR and environmental contamination. Baseline information on the production of medicines, AM trade, and AM use is needed. A progressive management pathway(s) is proposed, and inputs into better hygienic practices are envisioned to curb overuse/abuse. Integrated surveillance is envisioned (human, animal, crop, and environment). Cross-sector collaboration is critical for improved management.		
Main response proposed to address the issue			

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Main actor(s) concerned or involved in the response proposed

National Government actors across ministries (health, agriculture, livestock, environment, fisheries, finance) and at multiple levels, private sector actors in food and agriculture production and marketing. CSOs and various actors of international bodies such as the WHO, OIE, UNEP, World Bank Group, Regional Economic Communities, European Union, bilateral donors among others. Outreach to foundations is ongoing.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			X

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	X	X	X	X	Health and disease
Nature of the main impact of the issue on FSN	X	X	X	X	Food contaminants, residues, and food-borne pathogens

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	<i>Classification (**)</i>			
997. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue X	
998. Breadth: Are there many people affected?	Few		Many X	
999. Scale: local/national/regional/global?	Local	National	Regional	Global X
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1000. Impact on Availability	++
1001. Impact on Access	+
1002. Impact on Utilization/ nutrition	+
1003. Impact on Stability	++



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1004. Impact on most vulnerable people	++		
1005. Impact on women	++		
1006. Impact on children	++		
1007. Impact on marginalized populations	++		
1008. Cost to address the issue	Low	Middle	High X

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The negative impact of not being able to treat and prevent impending infections (in human and animals), risks in the performance of simple surgeries, cancer treatments, ensuring a safe food supply (i.e., food-borne infections) can cost trillions of [US] dollars; and there are published estimates that unless improved governance and practices are instituted in the use of AM the annual human deaths by 2050 can reach 10 million per year (with 90 percent of the fatalities occurring in developing countries). Intensification in food and agriculture systems, required to meet the growing demands in a growing demographic, is a complex problem as life-saving medicines are being used or overused in aquatic and terrestrial animals, for crops, as medicated feed, or as growth promoters. Food safety and food security and health are closely linked and guidance to the food production and monitoring of the agro-ecosystem is required, improved hygiene and compliance is urgently required.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Described above

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High X
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Institution of best practices in disease prevention and hygiene in food and agriculture systems requires sub-national (community), national, and regional inputs, including coherent legislation across in-line ministries, regional organizations, medical education (human, veterinary), environmental monitoring of discharges from hospitals/clinics and the multi-billion dollar and international pharmaceutical industry. Research into alternatives to AM use and new medicines is required, as well as methods for grass-roots capacity development and outreach – i.e., farmer/livestock field

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schools, communication.

#### **6. Linkages with SDGs (1 to 17)<sup>85</sup>**

Improved governance and management of AM use and promote good practices and governance is critical to achieving the Sustainable Development Goals (SDGs) by 2030, in particular to:

- End poverty (SDG1)
- End hunger, achieve food security and improved nutrition and promote sustainable agriculture (SDG2)
- Ensure healthy lives and promote well-being for all at all ages (SDG3)
- Ensure availability and sustainable management of water and sanitation for all (SDG6)
- Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (SDG8)
- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (SDG9)
- Make cities and human settlements inclusive, safe, resilient and sustainable (SDG11)
- Ensure sustainable consumption and production patterns (SDG12)
- Conserve and sustainably use the oceans, seas and marine resources for sustainable development (SDG14)
- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (SDG 15)
- Strengthen the means of implementation and revitalize the global partnership for sustainable development (SDG17)

#### **7. The case being, linkages with any other issue**

#### **8. Additional Supporting Information**

*Additional information*

<sup>85</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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*Evidence*

See references below

*Knowledge gaps*

- Environmental (contamination) and transmission of AMR that affect public health or food production systems;
- Extent of the contribution of AM use and AMR in food and agriculture and its impact on public health;
- Alternatives to antimicrobial use;
- Affordable vaccines to terrestrial/aquatic animal production;
- Rapid (and affordable) point-of-care diagnostics to medical personnel;
- New medicines;
- Coherent national legislation;
- Baseline information of pharmaceutical production at national and international level including trade and destined use.

*References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization (FAO) of the United Nations		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37J Increasing climate variability and climate change</i>		
Description of the issue <i>in less than 5 lines</i>	Increasing climate variability, increasing extreme events and climate change constitute an additional challenge to achieving food security as they reduce the productivity of the majority of existing food systems and harm the livelihoods of those already vulnerable to food insecurity, especially for tropical regions with high incidence of hunger. This requires to increase resilience of agriculture and food systems to climate variability and change		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	ChallengeX	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Climate change has both direct and indirect impacts on agricultural production systems. Direct impacts include effects caused by a modification of physical characteristics such as temperature levels and rainfall distribution on specific agricultural production systems. Indirect effects are those that affect production through changes on other species such as pollinators, pests, disease vectors and invasive species. Impact translates from climate to the environment, to the productive sphere, to economic and social dimensions, bringing a range of additional risks on availability of food, on access to food and utilization of food, as well as on the stability of these characteristics, for both farm and non-farm households. Climate change will also have broader impacts through effects on trade flows, food markets and price stability and could introduce new risks for human health. Climate change thus affects food security in all its dimensions: access, availability, utilization and stability. Greatly		

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	expanded efforts to respond to climate change and building resilience are needed immediately to safeguard the capacity of food systems to ensure global food security.
Main response proposed to address the issue	First, there is a need to integrate food security and climate change concerns. Addressing climate change in agriculture can be pursued in the context of sustainable agriculture development and food security objectives, as provided by the climate-smart agriculture framework. Second, there is a need to increase resilience of food systems to climate change at all levels from the field to landscapes, policies and markets. These measures have to be specific to local circumstances. And finally, there is a need to develop low-emission agriculture strategies that do not compromise food security. This means increasing the resource use efficiency in food systems, which would lead to lower emission intensity per unit of output.
Main actor(s) concerned or involved in the response proposed	Tackling climate change requires actions from all agriculture and food systems' stakeholders, including farmers, fishers, forest dependent people and their organizations, civil society, policy makers, the UN system including FAO, financing institutions, research community, and private sector. Moreover, many of the responses require also involvement and commitment of actors outside the agriculture and food sectors.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			Agriculture is affected by the increasing climate variability and climate change and is also a source of greenhouse gas emissions

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue			X		
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

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### 3. Attributes of the Issue

	<b>Classification (**)</b>			
1009. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issueX
1010. Breadth: Are there many people affected?	Few			ManyX
1011. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	GlobalX
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1012. Impact on Availability	- -			
1013. Impact on Access	- -			
1014. Impact on Utilization/ nutrition	-			
1015. Impact on Stability	- -			
1016. Impact on most vulnerable people	- - Likely to harm the livelihoods of those already vulnerable to food security			
1017. Impact on women	- Women's lack access to essential resources will curtail their opportunities to adapt to climate change			
1018. Impact on children	-			
1019. Impact on marginalized populations	- - Climate variability and change will impose pressure on traditional livelihoods, which may exceed the coping capacity of the marginalized populations			
1020. Cost to address the issue	Low	Middle	High X	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

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**5. Degree of confidence**

Solidity of currently available knowledge base.	Low	X Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**6. Linkages with SDGs (1 to 17)<sup>86</sup>**

The issue of climate change is linked to several SDGs and targets. Specific and strong linkage is articulated with the SDG 2 on "end hunger, achieve food security and improved nutrition and promote sustainable agriculture" specifically with target 2.4; and SDG 13 on "take urgent action to combat climate change and its impacts and linked with all targets (13.1, 13.2, 13.3, 13a, & 13b).

**7. The case being, linkages with any other issue****8. Additional Supporting Information**

*Additional information*

<sup>86</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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*Evidence*

There is increasing evidence of the impact of climate change on agricultural production and an FSN (FAO, 2016; IPCC, 2014). The likelihood of meeting the meeting the 2<sup>0</sup> target of maximal average temperature rise set by the UNFCCC negotiations is diminishing with time. Different scenarios estimate different temperature increases. Their impact on agriculture and food systems will depend on the exposure of the systems to those changes, as well as on the adaptive capacity and resilience of the systems. Agriculture and land use change with substantial mitigation potential through reduced emissions per unit of production and carbon sinks are a part of the solution to climate change.

*Knowledge gaps*

Research is needed on various aspects of climate change and its impact on agriculture and food systems. Moreover, knowledge is lacking on appropriate responses for different agro-ecological and socio-economic environments that incorporate food security, adaptation and reduced GHG emissions per unit of output.

*References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization (FAO) of the United Nations	
Do you answer on behalf of your institution, or as an individual?	On behalf	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37K Only safe food can alleviate food insecurity, inadequate attention to domestic food safety is given by most low-income countries.</i>		
Description of the issue <i>in less than 5 lines</i>	In resource constraint environments, the safety of domestic food supplies is often neglected exacerbating malnutrition and hampering economic development. Linkage and interactions between policy makers charged with mandates for national food security, nutrition and food safety (linkage to policy in other areas environment etc) is often insufficient and needs to be strengthened.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>			<p>It depends.</p> <p>This can be seen as both a challenge and an opportunity for FSN.</p> <p>A challenge – because there are potentially a range of possible food safety risks to be addressed, and they will vary from country to country. Setting overly strict standards, or requiring food</p>

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			businesses to immediately comply with new legislation could negatively impact on food supply and food security. An opportunity for FSN as the overall goal of food and nutrition security can only be met where foods are safe. This becomes even more critical where a population or sub-population relies on a specific staple as their main source of food.)
<p>Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition</p> <p><i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</p>	<p>Although countries continue efforts to strengthen their food safety systems, too often it focuses on food exports only and neglects adequate controls for domestic food safety, an area of weakness in many countries. Sources of information include reviews and assessments of food control systems in various countries, pilot testing of the FAO/WHO Food control system Assessment Tool, and the application of evidence-informed decision making for food safety policy and decisions considering multiple factors, as well as FAO projects to support countries in strengthening food safety or improving safety in a specific value chain (e.g. sorghum, pistachios), studies and surveys completed on the presence of specific hazards in foods e.g. parasites in a range of foods, mycotoxins in sorghum, etc.)</p> <p>There is growing yet still insufficient awareness of the need to improve policy coherence at country level.</p>		

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Main response proposed to address the issue	<p>Strengthened action by government policy and decision-makers to give priorities and allocate adequate attention to food safety aspects of the domestic food supply.</p> <p>Collation and summation of evidence that demonstrates the linkage between food safety and FSN and provides evidence of the cost of unsafe food to the health and productivity of people.</p> <p>An analysis to be undertaken to identify the opportunities with highest synergistic potential to have cooperation and coordination between different policy makers for FSN.</p>
Main actor(s) concerned or involved in the response proposed	<p>At country level key policy makers with responsibility for food safety, working with private sector and academia. Policy makers in other areas of nutrition and food security policy will also need to be engaged to ensure the efficacy of food security programs.</p> <p>At global level, FAO should continue to provide a lead to ensuring a common understanding of food safety as an essential component of FSN. This would require interaction through established fora (e.g. ICN2, CFS, FSIN, CAADP, etc.) and with key partners, that may include WHO, IFPRI, WFP, IFAD etc.</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?		It is internal, and intrinsic	

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	Yes	Yes	Yes	Yes	
Nature of the main impact of the issue on FSN	Unsafe food leads malnutrition and low productivity as well as to loss of economic income where existing markets are lost, or potential markets	Social and cultural traditions can have a direct impact on the potential to increase or reduce risk from food safety hazards. In many countries, there are also strong	As countries continue to increase food production, there will be increased pressures on the environment and potential for contamination and deterioration of land and water quality. Policy coherence is important to ensure that food	Managing food supplies to ensure they are safe, and of good quality requires strong governance, led by very often a number of Ministries. It is essential however that	

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	cannot be accessed. There is also growing awareness and attention being given to informal markets and sectors.	traditions centered around food production which need to be considered when developing appropriate food safety policy. Small and medium sized producers should be supported to comply with food standards.	production does not unduly contaminate the environment, and that action or inaction in the environment sector does not unduly result in unsafe food. There is also impacts from climate change which can result in increased natural toxins in fish and grains, impacts on water quality, .....	the governance structure sets an enabling environment for the private sector to produce safe food and contribute to policy development.	
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(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
1021. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue X	
1022. Breadth: Are there many people affected?	Few		Many X	
1023. Scale: local/national/regional/global?	Local X	National	Regional X	Global X
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — —, —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1024. Impact on Availability	(-) in cases of sufficiently high level of contamination, eg. mycotoxin in maize, arsenic in rice, pests in grains etc – the agricultural product is unfit for human consumption and will need to be discarded
1025. Impact on Access	(-) Where illness or deaths occur in a household, this can have a direct negative impact on ability to work, re-direction of limited household budget from food to health care, - these result in less productive time available to produce food, reduce income available to purchase food. The consumption of unsafe food leads to lower productivity, exacerbating the limitation of access to food.
1026. Impact on Utilization/ nutrition	(-) Unsafe food often leads to and always exacerbates malnutrition. A person whose health status is already compromised due to reduced nutritional status – is more vulnerable to contract

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	food-borne illness.		
1027. Impact on Stability	(-) in certain cases stability of the food supply can be affected by unsafe food, e.g. in the case of a large food safety emergency.		
1028. Impact on most vulnerable people	(-) most vulnerable people are even more prone than the average population to contract food borne illnesses from unsafe food further increasing their vulnerable status		
1029. Impact on women			
1030. Impact on children	(-) Children are in particular at risk; WHO FERG revealed that children disproportionally bear the burden of food borne illnesses		
1031. Impact on marginalized populations			
1032. Cost to address the issue	Low	Middle X	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High X
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>87</sup>

<sup>87</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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To build and strengthen the capacities to implement global food safety standards and thus enabling access to trade for their local food value chains contributes to value creation and employment in support of SDG1 to help end poverty in the agriculture sector.

Food safety is a critical goal for SDG2, as improved nutrition can only be achieved when the food consumed is safe. Furthermore, food safety has shown to be one of the critical predictors for food security, food always needs to be safe for human consumption.

Food safety is one of the most essential prerequisites for SDG3, ensure healthy lives and promote well-being for all ages. The toll of 31 food-borne hazards to humans has recently be quantified by WHO-FERG study to be 31 million DALY's with 40% of the burden among children under the age of 5.

SDG 12 requires sustainable consumption and production patterns, protecting consumer's health and ensuring they have access to safe food at all times is a basic human right.

## **7. The case being, linkages with any other issue**

## **8. Additional Supporting Information**

### *Additional information*

Regarding the timescale in point 4 above, work in this area has begun, but it needs to be strengthened. An additional component is to raise an understanding which can lead to more integrated action on cross-sectoral policy for FSN. Investing in domestic food safety can see results within 5 years, but it is an investment countries need to make in the medium and long-term.

### *Evidence*

Published papers and FAO projects demonstrating weaker controls, and less focus on domestic food safety

Results of the WHO initiative to estimate the global burden of food-borne disease (FERG)

Background papers available on incidence of parasites in main foods FAO/WHO Joint Expert Meeting September 2012 Multicriteria-based ranking for risk management of food borne parasites.

Data and information available from the FAO/WHO Project on Mycotoxins in sorghum

Case Evidence being developed as part of the food safety component on applying multiple criteria approaches to developing food safety policies and decisions [FAO/EC Programme on Global Governance for Hunger Reduction]. FAO. Pilot project in Uganda (2014). Testing Multi-criteria approaches for food safety decision making Uganda pilot country report – <http://www.fao.org/3/a-bc265e.pdf> (accessed on 9 December 2016)

FAO guidance document on Evidence informed food safety policy and decisions (prepublication copy available)

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Results of countries assessments on food control systems applying the FAO assessment tool (in pilot phase)

Greater advocacy and recognition of the importance of food safety to food and nutrition security:

- Side Event during CFS 42 Investing in food safety for equitable and sustainable development <http://www.fao.org/cfs/cfs-home/plenary/cfs43/side-events/68/en/>.
- In 2014, during ICN2 a Side Event was held entitled *Food Safety: A right or a privilege*, <https://www.youtube.com/watch?v=P6BFtRNrf6A>
- FAO/WHO video on food safety and food security [https://www.youtube.com/watch?v=NiqEV\\_NLw7g](https://www.youtube.com/watch?v=NiqEV_NLw7g).

#### *Knowledge gaps*

While a lot of data exists potentially, effort needs to be made to draw key lessons and evidence to clearly present the negative impact of unsafe food on FSN.

#### *References*

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Ruzante et al, 2010. A multi-factorial risk prioritisation framework for food borne pathogens.

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WHO FERG Reports: [http://www.who.int/foodsafety/areas\\_work/foodborne-diseases/ferg/en/](http://www.who.int/foodsafety/areas_work/foodborne-diseases/ferg/en/)

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization of the United Nations (FAO)		
Do you answer on behalf of your institution, or as an individual?	On behalf of FAO		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International organization		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K37L Use of agricultural biotechnologies for food security and nutrition		
Description of the issue <i>in less than 5 lines</i>	Agricultural biotechnologies represent a wide range of traditional, recent and also newly emerging technologies that can be applied in the crop, livestock, forestry and fishery sectors to strengthen food security and improve nutrition (FSN).		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends X
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Over the past years, FAO has been at the forefront in providing high-quality, updated, balanced science-based information to its Member countries and their relevant institutions and in providing a neutral platform for them to exchange information on agricultural biotechnologies. The Organization has therefore been able to document numerous case studies of their use for smallholders and to recognize the potentially important role that agricultural biotechnologies can play for FSN.		

Main response proposed to address the issue	Depending on the typology of agricultural biotechnologies involved (see Section 8), there are certain factors which are hindering developing countries from using agricultural biotechnologies and directing them towards their FSN needs. Efforts to assist countries in decision-making, so they can then prioritize and make the appropriate investments in research and capacity development initiatives for the different typologies of biotechnologies, should be intensified.
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Main actor(s) concerned or involved in the response proposed

- Governments play a fundamental role in creating an enabling environment for their smallholders to access agricultural biotechnologies.
- Intergovernmental organizations like FAO provide a neutral forum for governments, civil society, the private sector, farmer organizations and other stakeholders to discuss and exchange knowledge and experiences about agricultural biotechnologies.
- Donors can fund individual and institutional capacity development initiatives to enable countries to develop and apply agricultural biotechnologies for their own FSN needs.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Developments in science and technology, including agricultural biotechnologies, depend on drivers from within the different food and agriculture domains as well as from R&D in many other fields. For example, sequencing of the human genome has had many scientific spillovers to sequencing the genomes of animal, plant and microbial species of agricultural importance.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	XX		XX	X	
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Use of biotechnologies in the crop, livestock, forestry and fishery sectors can impact the economic and environmental consequences of farming. Access to use of biotechnologies may be restricted through lack of capacities in the countries and ownership of intellectual property rights over key technologies.

## 3. Attributes of the Issue

	Classification (**)	
1033. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical points	

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1034. Breadth: Are there many people affected?				Many
1035. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1036. Impact on Availability	++			
1037. Impact on Access	0			
1038. Impact on Utilization/ nutrition	+			
1039. Impact on Stability	++			
1040. Impact on most vulnerable people	Can impact all people, including most vulnerable people			
1041. Impact on women	Can impact men, women and children			
1042. Impact on children	Can impact men, women and children			
1043. Impact on marginalized populations	Can impact all people, including marginalized populations			
1044. Cost to address the issue	Low (depends)	Middle (depends)		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Biotechnologies involve low-tech approaches (e.g. use of fermentation to produce traditional fermented foods and beverages) to higher-tech approaches (e.g. animal vaccines, plant disease diagnosis kits, GMOs) so virtually everybody, as a producer or consumer, is impacted.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X		
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

While many biotechnologies are well-established (e.g. artificial insemination, tissue culture), new emerging biotechnologies, such as gene editing and synthetic biology, are now available which may offer large benefits for FSN but they have also raised a number of concerns.

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

For many well-established biotechnologies, much is known about their advantages, disadvantages and impacts with respect to FSN. For more recent and newly emerging biotechnologies, less evidence is available on these aspects.

## **6. Linkages with SDGs (1 to 17)<sup>88</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

The issue is most relevant to SDG2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture).

It is also directly relevant to SDGs:

1 (End poverty in all its forms everywhere) because of potential impact of biotechnologies on rural development

6 (Ensure availability and sustainable management of water and sanitation for all) because of potential impact on making agriculture more water efficient

13 (Take urgent action to combat climate change and its impacts) because of potential impact of biotechnologies on making agriculture more 'climate smart'.

14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development), because of use of biotechnologies to characterise and conserve aquatic genetic resources

15 (Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss) because of use of biotechnologies to characterise and conserve forest genetic resources

## **7. The case being, linkages with any other issue**

It is linked to:

- Climate Change, as applications of both low- and high-tech approaches can help producers, particularly family farmers and small-scale producers, in the different sectors to be more resilient and to better adapt to climate change.
- The trend towards concentration in the plant and animal agricultural input sector, as recent mergers and acquisitions mean that a small number of economically-important multinational private companies have large patent portfolios that may affect access to biotechnology-related research tools and technologies.

## **8. Additional Supporting Information**

### *Additional information*

Based on the definition of 'biotechnology' in Article 2 of the Convention on Biological Diversity, as "*any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use*", the term 'agricultural biotechnologies' encompasses a broad range of technologies that can improve FSN through, for example, genetic improvement of plant varieties and animal populations; characterization and conservation of crop, forestry, aquatic and livestock genetic resources for food and agriculture; and identification of pathogens causing plant/animal diseases or food contamination.

The abilities of countries to use them for their FSN needs, depend also on the typology of biotechnologies involved.

First, at the one end, are biotechnologies that are relatively "low-tech", which tend to be relatively simple to develop and apply as well as relatively inexpensive, with respect to infrastructural, laboratory

<sup>88</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

or trained personnel requirements. These biotechnologies are well-established and have been widely used in different developing countries for such a relatively long time period that they can be called 'conventional' agricultural biotechnologies. Examples include use of fermentation to produce traditional fermented foods and beverages, artificial insemination, biofertilizers or micropropagation. Although relatively "low-tech", there are nevertheless important needs for capacity development initiatives to enable developing countries to fully use these agricultural biotechnologies for their FSN needs.

Second, at the other end, are a series of biotechnologies that are more "high-tech", such as the use of DNA-based markers for genetic selection; genomics; genetic modification to produce GMOs; or DNA-based kits for disease diagnosis and monitoring. Most of them involve the direct analysis or manipulation of DNA; were first developed within the last 20-30 years; and since then have undergone rapid evolution and technological development. Research involving the use of these "high-tech" agricultural biotechnologies tends to be very costly and requires highly-specialised personnel and has primarily been carried out in developed countries and by the private sector in these countries. Consequently, 'high-tech' biotechnology research and products have been directed mainly towards the needs of farmers in the developed (and not developing) countries and of more prosperous farmers that can afford the products rather than poorer farmers. As noted in the recent FAO Global Symposium on Agricultural Biotechnologies (<http://www.fao.org/about/meetings/agribiotechs-symposium/en/>), there are also concerns about intellectual property rights related to agricultural biotechnologies and their implications with respect to the development of sustainable food systems and nutrition.

Third, there are also newly emerging biotechnologies, such as gene editing and synthetic biology, which offer tremendous potential for FSN but have also raised concerns, for example when coupled with gene drive systems to spread mutations quickly through a population.

#### *Evidence*

FAO has documented numerous case studies in recent years where applications of biotechnologies have benefited smallholders. These case studies were presented in the background documents prepared by FAO for the 2010 FAO international technical conference on 'Agricultural biotechnologies in developing countries' (ABDC-10); in a series of parallel sessions dedicated to case studies during ABDC-10; in a 2013 FAO book documenting 19 case studies where agricultural biotechnologies have been applied to serve the needs of smallholders in developing countries; and in the 2016 FAO Global Symposium on Agricultural Biotechnologies.

#### *Knowledge gaps*

- There is a need for more assessments to be carried out to document the impacts of applying low-tech biotechnologies (such as fermentation-based approaches or artificial insemination) for FSN.
- It has been argued that private sector ownership of intellectual property rights of key enabling technologies and other components needed for R&D involving agricultural biotechnologies may be acting as a hurdle to public research in this area and to the application of biotechnologies for FSN. This area would benefit from further analysis.

#### *References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization of the United Nations (FAO)		
Do you answer on behalf of your institution, or as an individual?	Institution		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37M Supporting the dissemination of agroecology to ensure food security and nutrition for all in a sustainable manner</i>		
Description of the issue <i>in less than 5 lines</i>	Environmental, social and economic crises affect all countries. Agricultural production does in some cases contribute to these crises, for example through the use of chemical inputs, excessive extraction of groundwater, erosion of genetic resources, and poor conditions of work and remuneration for family farmers and agricultural workers. Agroecology represents an approach to agriculture that seeks to address these multiple crises and to make agriculture part of the solution. Agroecology is the integrative study of the interactions between plants, animals, humans and the environment within agricultural systems. It is gaining attention in a growing number of countries, including through policy support. Experiences of agroecology need to be shared among countries in order to support all countries in developing locally adapted solutions that spread the benefits of agroecology.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	<u>Opportunity</u>	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	A growing number of countries such as Brazil, France, Bolivia and China are adopting policies and programmes in support of agroecology. The growing interest in agroecology led FAO to organise the International Symposium on Agroecology for Food Security and Nutrition in 2014, which was followed by regional meetings in Latin America, Africa and Asia. These meetings, which saw the participation of hundreds of representatives of governments,		

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	research organisations, farmers' organisations, civil society organisations and the private sector confirmed the important role of agroecology in contributing to food security and nutrition, and considered how to further support its dissemination.
Main response proposed to address the issue	A large range of evidence exists on the positive impacts of agroecology, particularly at the local level. The sharing, dissemination, local adaptation and uptake of these approaches is the next step to ensure harnessing the full extent of the potential benefits of agroecology. This requires sharing of the appropriate policies among countries. As the principal inter-governmental inclusive forum for policy coordination and coherence for food security and nutrition, the CFS could consider the role that agroecology plays in achieving food security and nutrition in a sustainable manner, and the policies that could support this role. A report by the High Level Panel of Experts on Food Security and Nutrition would allow CFS members and participants to base their deliberations on the latest evidence in this field.
Main actor(s) concerned or involved in the response proposed	Governments have the role of developing and implementing policies for supporting agroecology. This would include governments at all levels: international, regional, national, sub-national and municipal. Research institutions would support this through the creation of trans-disciplinary research to address multi-faceted problems. Farmers' organisations support their members in the exchange and development of knowledge for the adoption and context-specific adaptation of agroecology. The private sector plays an important role in linking producers with consumers, particularly through local markets.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<b>External driver</b>	<b>Internal to food systems</b>	<b>Both</b>
Is the issue either or both?		X	

(*)	<b>Economic (and productive)</b>	<b>Social (and Cultural)</b>	<b>Environmental (resources, etc.)</b>	<b>Governance (institutions, rights, etc.)</b>	<b>Other (SPECIFY)</b>
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Interventions that have failed to take into account the three dimensions of sustainability (economic, social and environmental) have ultimately failed to provide long-term solutions to food and nutrition insecurity. This is why agroecology seeks to take into account the economic, social and environmental dimensions of the challenges faced by today's food systems, and to develop solutions that integrate and respond to all three dimensions. In addition, the dimension of governance is clearly an issue, for instance in relation to the governance of natural resources, policy coordination, and the participation of farmers' organisations and other CSOs.

### 3. Attributes of the Issue

	Classification (**)			
1. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			<u>Systemic issue</u>
2. Breadth: Are there many people affected?	Few			<u>Many</u>
3. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	<u>Global</u>
For items 4-11 below, please use the classification [ — —, —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
4. Impact on Availability	+			
5. Impact on Access	+			
6. Impact on Utilization/ nutrition	++			
7. Impact on Stability	++			
8. Impact on most vulnerable people	+			
9. Impact on women	+			
10. Impact on children	+			
11. Impact on marginalized populations	+			
12. Cost to address the issue	<u>Low</u>	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The impact of agroecological interventions on the most vulnerable groups, women, children and marginalized operations depends on the extent to which they have been empowered and included in the design of the intervention. Given that empowerment and participation require time and involve processes of social change, the full benefits may not be achieved at the outset in all cases.

The cost of interventions in support of agroecology are deemed low in comparison to the cost of inaction as well as the costs of interventions that have are not sustained over the long-term. They are



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also deemed to be low due to the emphasis placed on using locally available and adapted technologies, as well as the cooperation of farmers' organisations to organise knowledge sharing and training efforts.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	*	*	*
Moment to act to address the issue	*		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The dissemination of agroecology is already taking place in all regions, though to varying degrees. The need for international collaboration and coordination is required in the present period in order to harness the existing achievements and to strengthen the impact of agroecology in the medium and long term.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	<u>Middle</u>	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There is a wide range of research showing the importance of adopting agroecological approaches in order to reduce the use of chemical inputs, and to better manage soil and water resources by developing ecosystem services. Inter-disciplinary research has been able to show some of the impacts of agroecology beyond the ecological benefits to include social and economic impacts, but there is a need for more such research. There is growing documentation of existing laws, policies and programmes in support of agroecology, but there is less data available on the impacts of such policies.

#### 6. Linkages with SDGs (1 to 17)<sup>89</sup>

<sup>89</sup>

See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



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First indicate the most relevant SDG and, the case being, links existing with other SDGs

With an emphasis on economic, social and environmental sustainability, agroecology offers countries the opportunity to increase food security and nutrition, while protecting the environment and promoting social inclusion. It is capable of providing multiple benefits by enhancing food security and nutrition, restoring and maintaining healthy ecosystems, delivering sustainable livelihoods to smallholders and building resilience to adapt to climate change. Agroecology contributes to sustainable food security and nutrition in the following ways:

6. Supporting **nutrition security and sustainable diets** (SDG 2, 3, 5, 12).
7. **Ensuring the sustainability of the natural resource base** (SDG 6, 7, 11, 13, 14, 15), and
8. Promoting processes that **enhance equity** (SDG 1, 4, 5, 8, 10, 16)
9. Strengthening **farmer innovations** (SDG 4, 9)
10. Markets for agroecological production require small-scale food processing and associated **infrastructure** (SDG 9)
11. Agroecology emphasises the right of smallholders to **participate** in decision-making on issues that affect their lives (SDG 17)

#### 7. The case being, linkages with any other issue

#### 8. Additional Supporting Information

*Additional information*

*Evidence*

There is a wide range of research showing the importance of adopting agroecological approaches in order to reduce the use of chemical inputs, and to better manage soil and water resources by developing ecosystem services. Inter-disciplinary research has been able to show some of the impacts of agroecology beyond the ecological benefits to include social and economic impacts, but there is a need for more such research. There is growing documentation of existing laws, policies and programmes in support of agroecology, but there is less data available on the impacts of such policies. Strengthening the evidence base requires developing indicators that would capture the multiple impacts of agroecology and this is a topic of current research given that existing indicators tend to privilege yields and production over social and environmental dimensions.

*Knowledge gaps*

The currently available knowledge base on agroecology is substantial, and is growing, but could be further strengthened, particularly in certain regions. The FAO symposia on agroecology served to identify many research needs, ranging from technical and scientific issues, to issues related to institutional processes and governance. Certain ecological zones, such as drylands, or production systems, such as livestock-based systems, have received less attention from researchers. Many open questions relate to organisational, institutional and governance issues, such as how to ensure the access of family farmers to natural resources, how to strengthen collaborative research drawing for farmer and scientific knowledge systems, how to promote markets for biodiverse products coming from agroecological farming systems, etc.

*References*

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- Gliessman, S.R. 2015. Agroecology: the Ecology of Sustainable Food Systems. 3rd Edition. Boca Raton, FL, USA, CRC Press, Taylor & Francis Group.
- Hainzelin, E. ed. 2014. Cultivating Biodiversity to Transform Agriculture. Netherlands, Springer.
- Mapfumo, P. 2009. Integrating sustainable soil fertility management innovations in staple cereal systems and other value chains to enhance livelihoods and environmental systems in Southern Africa. A SOFECSA technical annual report for the sub-Saharan Challenges Program (SSA-CP) prepared for the Forum for Agricultural Research in Africa (FARA). Soil Fertility Consortium for Southern Africa (SOFECSA). Harare, CIMMYT-Zimbabwe. 26 pp.



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization of the United Nations (FAO)	
Do you answer on behalf of your institution, or as an individual?	On behalf of FAO	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International organization	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>			
Description of the issue <i>in less than 5 lines</i>	<i>K37N The persisting lack of farm power and power along the food systems in countries in development and transition hampers improved nutrition and increased food security, and contributes to climate change</i>		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>			Both
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	The issue has been identified both with empirical and normative work carried by FAO. In particular field-based development projects conducted in Asia, the Middle East, Africa and Central and Latin America, along with the many stakeholder (public, private NGO, IGO, CBO sectors) meetings implemented over the years have provided a plethora of data. One of the main findings from this data points to a lack of farm power and power along food systems that, if provided, could surpass the challenges of augmenting nutrition and food security.		

Main response proposed to address the issue	Sustainable Agricultural Mechanization (SAM) at farm level and along the food systems, adapted and implemented with appropriately and suited technologies, and considering social, economic, cultural and environmental factors, would undoubtedly contribute to opportunities for preserving and conserving nutritious food along food systems, enhance productivity, efficiency and effectiveness of food distribution networks for increased food security, while at the same time preventing, mitigating and adapting to climate change.
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Main actor(s) concerned or involved in the response proposed

Public sector, Private sector, IGOs, NGOs, CBOs

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			✓

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	✓	✓	✓	✓	
Nature of the main impact of the issue on FSN	✓	✓	✓	✓	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The lack of access and use of power, via SAM, is related to the external broader context (macro factors) of nation states, meso factors of the agri-food sector and internal aspects (micro level) related to the food systems based on mainly social (and cultural), economic and environmental aspects as well as those pertaining to governance.

## 3. Attributes of the Issue

	Classification (**)			
1045. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
1046. Breadth: Are there many people affected?				Many
1047. Scale: local/national/regional/global?	Local	National	Regional	Global

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1048. Impact on Availability	- 0
1049. Impact on Access	- +
1050. Impact on Utilization/ nutrition	- +-

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1051. Impact on Stability	- +		
1052. Impact on most vulnerable people	+ -		
1053. Impact on women	- -		
1054. Impact on children	- 0		
1055. Impact on marginalized populations	0		
1056. Cost to address the issue	Low		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The lack of access and use of power, via SAM, has considerable effects and impacts on many marginalized people the world over, it ostracizes the most vulnerable and is gender insensitive. However the real costs to address the issue in comparison to the benefits of improved nutrition and increased food are minimal.

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	✓	✓	✓
Moment to act to address the issue	✓		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Tackling the issue of lack of access and use of power, via SAM, in the current period, would provide short, medium and long term benefits based on social, economic and environmental models of diffusion and importantly adaptation of SAM power technologies

#### 5. Degree of confidence

Solidity of currently available knowledge base.			High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

FAO, for over six decades, has conducted both empirical and normative work on mechanization along the food system, thus providing a concrete and factual knowledge hub.

#### 6. Linkages with SDGs (1 to 17)<sup>90</sup>

<sup>90</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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The primary SDG SAM refers to is SDG 2 *Zero Hunger* (targets 2.1,2.2,2.3, 2.4, 2a,2c) but also has considerable development ramifications for SDG 12 *Responsible Production and Consumption* (targets 12.1, 12.2, 12.3, 12.5, 12.6), SDG 10 *Reduced Inequalities* (targets 10.1, 10b), SDG 5 *Gender Equality* ( targets 5.1, 5.5, 5a, 5b) SDG 8 *Decent Work and Economic Growth* (targets 8.2,8.3, 8.5, 8.6, 8.10) and SDG 13 *Climate Action* (targets 13.1, 13.2, 13b).

## 7. The case being, linkages with any other issue

SAM is related to many other aspects related to food security and nutrition such as the generation of energy, infrastructure building and its maintenance, water and its availability and access, well-being and health, and social stability and cohesion.

## 8. Additional Supporting Information

### *Additional information*

The lack of farm power and power along the food systems pertains to one of the main root causes of malnutrition and food insecurity. The opportunities provided by SAM not only contribute to increased farm productivity, higher yields and improved quality of crops, all in an environmentally friendly- manner, but provide for more efficient and effective post-harvest and marketing operations, enhancing food quantities, availability and access. SAM also enables the speeding up of operations, enhancing food composition preservation, thus up-keeping the nutritional components of food until consumption. Further it reduces work burdens, providing time and labour saving technologies along the food supply system, from farm to fork, and enables the release of farm-family labour for employment in off-farm work as well as provides for increased opportunities in entrepreneurial activities devoted to food value addition and transport enterprises (mobility). Moreover SAM provides for gender equalizers as it offers women numerous opportunities to reduce labour intensity, ensures improved food security and nutrition for families, increases time value of work and augments women-based commercialization activities.

### *Evidence*

FAO, has over six decades of experience both empirical and normative, on a global basis, on the thematic area of mechanization and its technologies, based on economic, social and environmental aspects, involving in this process the many stakeholders ( public, private, NGO, IGO, CBO sectors) that pertain to such development efforts. The plethora of data derived from such long standing experience and activities has not only equated to providing for field-tested capacity building and capacity development models, but also adapted and adopted technologies and policy design and formulation know-how making FAO a knowledge hub for SAM and its pertinence to food security and nutrition

### *Knowledge gaps*

Still some gaps remain, in terms of enhancing knowledge on SAM for furthering its interconnectedness to food security and nutrition. There is also a need to further reinforce knowledge on SAM in terms of sustainable (social, environmental and economic) adoption and adaptation models.

*References*

FAO SAM website

<http://www.fao.org/sustainable-agricultural-mechanization/en/>

FAO Meeting 2016 on SAM for sub-Saharan Africa

<http://africamechanize.act-africa.org/>

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FAO.2015. *A Regional Strategy for Sustainable Agricultural Mechanization. Sustainable Mechanization across Agri-Food Chains in Asia and the Pacific region*, Bangkok

FAO.2013. *Mechanization for rural development. Issues and Patterns in agricultural mechanization – A review*, Rome

FAO.2013. *Agricultural hand tools in emergencies: Guidelines for Technical and Field Officers*, Rome

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FAO.2011. *Rural structures in the tropics*, Rome

FAO.2011. *Rural transport and traction enterprises for improved livelihoods*, Rome

FAO.2009. *Farm equipment supply chains - Guidelines for policy-makers and service providers: experiences from Kenya, Pakistan and Brazil*, Rome

FAO.2008. *Guide de formulation d'une stratégie de mécanisation agricole. Etude de cas: stratégie nationale de la mécanisation agricole du Mali*, Rome

FAO.2007. *Addressing the challenges facing agricultural mechanization input supply and farm product processing*, Rome

FAO.2005. *Contribution of farm power to smallholder livelihoods in sub-Saharan Africa*, Rome

FAO.2001. *Principles and practices of small- and medium-scale fruit juice processing*, Rome

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization of the United Nations (FAO)		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International organization		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K370 Transboundary animal and plant pests and diseases and food safety incidents</i>		
Description of the issue <i>in less than 5 lines</i>	Globalization and climate change are increasing the risk of transboundary animal and plant pests and diseases and food safety incidents as well as increasing their frequency, intensity and scope. They have serious impacts on food systems and human health as well as a long term impact on trade.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Continuous monitoring of events and their impacts. Mandatory reporting of events in animal diseases, plant pests and food safety to relevant bodies, with concurrent reporting to EMPRES.		

Main response proposed to address the issue	Organization of monitoring at national, regional and global levels to allow early action to prevent/limit spread and reduce impact of transboundary animal and plant pests and diseases and food safety incidents affecting the food chain. Capacity development to strengthen national and regional institutions in monitoring and prevention.
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

International organizations and conventions (FAO, OIE, WHO, IAEA, IPPC), regional organizations and governments.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Mainly internal, but depending on the type of threat, could be caused by an external event to food systems such as nuclear incidents

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue			x		Depending on nature of threat (biological or chemical contamination)
Nature of the main impact of the issue on FSN	x	x	x	x	Human health

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1057. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
1058. Breadth: Are there many people affected?				Many
1059. Scale: local/national/regional/global?	Local	National	Regional	Global xxxx
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1060. Impact on Availability	— —
1061. Impact on Access	—
1062. Impact on Utilization/ nutrition	— —
1063. Impact on Stability	— —
1064. Impact on most vulnerable people	— —
1065. Impact on women	— —
1066. Impact on children	— —
1067. Impact on marginalized populations	— — (depending on the event, eg pastoralists for animal diseases)
1068. Cost to address the issue	Low

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The cost of prevention and early action is significantly lower than the cost of the event itself and its direct and indirect impact.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High xxxxxx
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Many recent studies and analyses have been carried out to prove the cost effectiveness of prevention.

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#### **6. Linkages with SDGs (1 to 17)<sup>91</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Contributes directly to SDG: 2, 1, 3,

As well as to SDG: 5, 12, 8, 10, 16, 15

It is also linked to the realization of SDGs 9, 6, and 17.

#### **7. The case being, linkages with any other issue**

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>91</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

*Knowledge gaps*

Projections on the impact of climate change and globalization on transboundary threats.

*References*

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FAO and WHO. 2016. Pesticide residues in food 2016 REPORT 2016 Special Session of the Joint FAO/WHO Meeting on Pesticide Residues. FAO PLANT PRODUCTION AND PROTECTION PAPER 227. Report of the special session of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group on Pesticide Residues Geneva, Switzerland, 9–13 May 2016. <http://www.fao.org/3/a-i5693e.pdf>

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FAO. 2013. World Livestock 2013 Changing disease landscapes. <http://www.fao.org/docrep/019/i3440e/i3440e.pdf>

OIE and FAO, 2015. Global control and eradication of peste des petits ruminants Investing in veterinary systems, food security and poverty alleviation. <http://www.fao.org/3/a-i4477e.pdf>

FAO. 2014. Strengthening capacities and promoting collaboration to prevent wheat rust epidemics. Wheat rust diseases global programme. 2014–2017. <http://www.fao.org/3/a-i3730e.pdf>

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

FAO. 2010. EMPRES Food Safety, Emergency Prevention System for Food Safety, Strategic Plan  
<http://www.fao.org/docrep/012/i1646e/i1646e00.htm>

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization of the United Nations (FAO)		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37P Role of pastoralism for landscape management and peace keeping</i>		
Description of the issue <i>in less than 5 lines</i>	The impact of natural resource competition, considering climate change-related extreme weather events, and on pastoralist livelihoods particularly in the arid and semi-arid landscapes – links with stability and peace		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b>Challenge</b>	<b>Opportunity</b>	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	Compilation of land use and pastoralism related policies, and historical data on changes of natural resources use, to assess the availability of, and access to, natural resources (fodder, water, land...) and land grabbing and its link to conflicts. Prepare case studies to be validates with the involved communities.		

Main response proposed to address the issue	
Main actor(s) concerned or involved in the response proposed	National Government actors across ministries (agriculture, livestock, environment) and at multiple levels, Multiple users of pastoral land (pastoralists, farmers, investors, etc.), CSOs and other actors of international bodies such as the UNEP, World Bank Group, IFAD, WFP, Regional Economic Communities, European Union, bilateral donors among others.

Replies to the questionnaire are expected by 6 October 2016 by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			X

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1069. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point X		Systemic issue X	
1070. Breadth: Are there many people affected?	Few		Many X	
1071. Scale: local/national/regional/global?	Local	National	Regional	
	X	X	X	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1072. Impact on Availability	(- -) (if not addressed)/(++) (if addressed)
1073. Impact on Access	(- -) (if not addressed)/(++) (if addressed)
1074. Impact on Utilization/ nutrition	(- -) (if not addressed)/(++) (if addressed)
1075. Impact on Stability	(- -) (if not addressed)/(++) (if addressed)
1076. Impact on most vulnerable people	(- -) (if not addressed)/(++) (if addressed)
1077. Impact on women	(- -) (if not addressed)/(++) (if addressed)
1078. Impact on children	(- -) (if not addressed)/(++) (if addressed)
1079. Impact on marginalized populations	(- -) (if not addressed)/(++) (if addressed)
1080. Cost to address the issue	Low Middle High X

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

In many areas of the Arid and Semi-Arid Lands, the acute malnutrition rate regularly exceeds the emergency threshold level of 15 percent. The prevalence of stunting among children under five is extremely high in many affected countries. Pastoralism provides vulnerable households with a critical source of income and high quality protein, with high bioavailability and essential micronutrients such as iron, calcium, vitamin B12 and zinc. The topic is directly relevant to the CFS Framework for Action for Food Security in Protracted Crises, endorsed at CFS 42.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Described above

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle X	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Compilation of data is needed to build confidence

#### 6. Linkages with SDGs (1 to 17)<sup>92</sup>

- End poverty (SDG1)
- End hunger, achieve food security and improved nutrition and promote sustainable agriculture (SDG2)
- Ensure healthy lives and promote well-being for all at all ages (SDG3)
- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss (SDG 15)
- Strengthen the means of implementation and revitalize the global partnership for sustainable development (SDG17)

<sup>92</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



**7. The case being, linkages with any other issue****8. Additional Supporting Information***Additional information**Evidence*

See references below

*Knowledge gaps*

Compilation of data on pastoralism, land use and related policies, and their link with conflict is lacking

*References*

- [Pastoralist Knowledge Hub](http://www.fao.org/pastoralist-knowledge-hub/en/)  
<http://www.fao.org/pastoralist-knowledge-hub/en/>
- [Voluntary Guidelines on the Responsible Governance of Tenure](http://www.fao.org/nr/tenure/voluntary-guidelines/en/)  
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- [Information system for pastoralism in the Sahel \(SIPSA\)](http://www.fao.org/3/a-i2601e.pdf)  
<http://www.fao.org/3/a-i2601e.pdf>
- [Ecosystem Services & Biodiversity](http://www.fao.org/ecosystem-services-biodiversity/en/)  
<http://www.fao.org/ecosystem-services-biodiversity/en/>
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<http://www.fao.org/in-action/action-against-desertification/news-and->

[multimedia/news/en/](#)

- [Global Livestock Environmental Assessment Model \(GLEAM\)](#)  
<http://www.fao.org/gleam/en/>
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<http://www.fao.org/partnerships/leap/en/>
- [Sustainable Land Management](#)  
<http://www.fao.org/nr/land/sustainable-land-management/en/>
- [Land Degradation Assessment in Drylands \(LADA\)](#)  
<http://www.fao.org/nr/land/degradation/en/>
- [Global Plan of Action for Animal Genetic Resources](#)  
<http://www.fao.org/ag/againfo/programmes/en/A5.html>
- [Monitoring for environment and security in Africa](#)  
<http://rea.au.int/mesa/>



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization of the United Nations (FAO)		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37P Small ruminant (SR) diseases impact negatively on the nutritional status of vulnerable populations.</i>		
Description of the issue <i>in less than 5 lines</i>	SR diseases (Peste des petits ruminants [PPR], sheep/goatpox, brucellosis, foot-and-mouth [FMD] are fast spreading diseases affecting and killing sheep and goats. The livelihoods of some 300 million of the world's poorest rural families depend on SRs.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	<b>Challenge</b>	Opportunity	The deciding factor will be access to information and technology
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Animal source food from sheep and goats is an essential part of the daily diet of many people and contributes to overcoming malnutrition. Moreover, the sale of animals allows for the purchase of other food and a diversified diet. This is particularly important during food gaps in the dry season. Sheep and goat milk and meat are of high nutritional value, particularly for children, as they provide high quality protein and essential micronutrients critical for growth and cognitive development.		
Main response proposed to address the issue	International conferences on FMD and PPR have endorsed global control strategies in 2009 and 2015, respectively. FAO and OIE governing bodies have endorsed the PPR strategy and have formed a joint global secretariat to guide the eradication of PPR and have a formalised network to address FMD and other animal diseases of high impact. Progressive control pathways have been developed in order to assist and monitor progress using risk-based targeted approaches, strengthening of the veterinary systems		

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	<p>and addressing the needs of local populations (in areas of animal health intervention and best practices in animal production and or disease prevention).</p> <p>For example, in PPR, the specific disease initial programme for 2017-2021 has been developed, which will control the disease and be a first step towards eradication. The cost of this initial five-year programme is estimated at USD 996.4 million. The emerging international consensus and political support for the eradication of PPR, the technical feasibility, the high rates of return on investment that span generations, and the proven FAO-OIE partnership in successfully eradicating rinderpest are all strong guarantees of success. Addressing other health concerns while addressing a priority such as PPR or FMD is more cost effective and ensures safer food to consumers, greater efficiency in animal production, natural resource management and safe trade.</p>
Main actor(s) concerned or involved in the response proposed	National Government actors across ministries and at multiple levels, private sector actors in particular small ruminants production and processing sectors, CSOs and various actors of international bodies such as the OIE (World Organisation for Animal health), Int'l Atomic Energy Agency (Joint Division FAO/IAEA), African Union, Regional Economic Communities, European Union, World Bank Group, among others. Outreach to foundations is ongoing.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			X

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)	
1081. Depth: Is it relevant to food and nutrition systems as a whole, or to specific	Critical point	Systemic issue X

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parts of those systems?				
1082. Breadth: Are there many people affected?	Few			Many X
1083. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global X
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1084. Impact on Availability	— —			
1085. Impact on Access	—			
1086. Impact on Utilization/ nutrition	— —			
1087. Impact on Stability	—			
1088. Impact on most vulnerable people	— —			
1089. Impact on women	— —			
1090. Impact on children	— —			
1091. Impact on marginalized populations	—			
1092. Cost to address the issue	Low X	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The negative impact of PPR alone costs USD 2 B/annum. The FAO/OIE strategy seeks a ~250 million/annum commitment largely based on delivery of an inexpensive but effective vaccine. The case for FMD is similar, but the vaccine is costlier and the different types of FMD viruses make delivery more difficult.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

PPR, FMD, SP/GP are spreading at alarming rates over the past 15 years, and in the case of FMD new strains appear event 2-3 years. In the case of PPR, 2015-2016 saw the disease enter several and previously free regions and countries (i.e., China, Georgia and Mongolia).

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High X
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### **6. Linkages with SDGs (1 to 17)<sup>93</sup>**

The control and eventual eradication of the disease will contribute significantly to achieving the Sustainable Development Goals (SDGs) by 2030, in particular the elimination of poverty (SDG1) and the end of hunger and malnutrition (SDG2).

Improved management, elimination and even eradication of animal diseases (i.e., PPR) are also seen as key to contributing directly or indirectly to the achievement of other SDGs such as: SDG 3: Ensure healthy lives and promote well-being for all at all ages; SDG 5: Achieve gender equality and empower all women and girls; SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; SDG 12: Ensure sustainable consumption and production patterns; and SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

#### **7. The case being, linkages with any other issue**

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>93</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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*Knowledge gaps*

*References*

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- Jones, B.A., Rich, K.M., Mariner, J.C., Anderson, J., Jeggo, M., Thevasagayam, S., et al., 2016. The economic impact of eradicating peste des petits ruminants: A benefit-cost analysis. PLOS ONE 11 (2): e0149982.doi:10.1371/journal.pone.0149982  
(available at <http://dx.doi.org/10.1371/journal.pone.0149982>)

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization of the United Nations (FAO)	
Do you answer on behalf of your institution, or as an individual?	On behalf of FAO	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International organization	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>			
Description of the issue <i>in less than 5 lines</i>	<i>K37R Big data and its application in precision agriculture, including precision irrigation and precision applications of fertilizers and pesticides is playing an increasingly crucial role in agriculture in commercial farms. To what extent can smallholders systems benefit from this?</i>		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>			Both
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	The spread of mobile phones and related information and communications technology (ICT) to the hands of billions of individuals may be the single most significant innovation that has affected developing countries in the past decade. Across the developing world, mobile phones are used daily to transfer money, buy and sell goods, and communicate information including services requests, test results, stock levels and prices of commodities. The new generation of agricultural machines and tools are more climate-smart and contribute to an environmentally sustainable production, as is the case with mechanization services in conservation agriculture. Furthermore, more advanced energy-saving technologies, including solar energy, contribute to more sustainable farming.		

Main response proposed to address the issue	For smallholders the links between ICT and agriculture are not directly visible. Precision agriculture can mainly relate to more timely operations (early planting) and more precise application of rare and expensive inputs. Furthermore, ICT can create databases for categorizing smallholders for their eligibility for services. On the other hand, donors or support programmes need to be sure to target the poorest of the poor for possible direct support, e.g. mechanization services. Social profiling of smallholders combined with mapping of the fields and in combination with tracking service providers through GPS
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	technology makes it possible to monitor and trace services and to distinguish those smallholders that would be eligible for 100% support.
Main actor(s) concerned or involved in the response proposed	This methodology is currently being piloted as follows: FAO programme, through a MoA, facilitates social profiling of smallholders and maps out smallholder fields. FAO trains mechanization service providers to provide environmentally and energy efficient land preparation and planting practices (ripping, direct seeding). Service providers are monitored with GPS tracking technology. Online payment is done upon confirmation of provision of service.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			✓

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	✓	✓	✓	✓	
Nature of the main impact of the issue on FSN	✓	✓	✓	✓	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

While in commercial farming ICT and big data technology are mostly used for individual tracking and improving of field and input use and energy efficiency, in the context of smallholder farming it can include the important aspect of social mapping and monitoring of crucial services for timely and efficient sustainable intensification, including provision of mechanization services along the food system and according to the social profile of the household.

## 3. Attributes of the Issue

	Classification (**)			
1093. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
1094. Breadth: Are there many people affected?				Many
1095. Scale: local/national/regional/global?	Local	National	Regional	Global

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For items 4-11 below, please use the classification [ — —, —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)			
1096. Impact on Availability	-	-	
1097. Impact on Access	-	+	
1098. Impact on Utilization/ nutrition	-	0	
1099. Impact on Stability	-	0	
1100. Impact on most vulnerable people	++		
1101. Impact on women	-	+	
1102. Impact on children	-	+	
1103. Impact on marginalized populations	+		
1104. Cost to address the issue	medium		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The potential for using ICT, GPS and mobile phone technology to have a more inclusive approach and access to field services in agriculture has high potential especially for the vulnerable people, women and youth in rural areas. However, to date only a few FAO initiatives in selected countries are piloting this approach but the potential positive impact on making field services for land preparation, planting and others more accessible is high.

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	✓	✓	✓
Moment to act to address the issue	✓		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Tackling the issue using ICT technology for improving access to mechanization services including for smallholders could probably be part of an inclusive and forward looking modern sustainable mechanization strategy (link to other template related to SAM)

#### 5. Degree of confidence

Solidity of currently available knowledge base.			High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

FAO, has signed a MoU with Google Earth as well as with the European Agricultural Machinery Industries (CEMA). Both private sector partners are keen to partner with FAO on this important topic.

**6. Linkages with SDGs (1 to 17)<sup>94</sup>**

The primary SDG SAM refers to is SDG 2 *Zero Hunger* (targets 2.1,2.2,2.3, 2.4, 2a,2c) but also has considerable development ramifications for SDG 12 *Responsible Production and Consumption* (targets 12.1, 12.2, 12.3, 12.5, 12.6), SDG 10 *Reduced Inequalities* (targets 10.1, 10b), SDG 5 *Gender Equality* ( targets 5.1, 5.5, 5a, 5b) SDG 8 *Decent Work and Economic Growth* (targets 8.2,8.3, 8.5, 8.6, 8.10) and SDG 13 *Climate Action* (targets 13.1, 13.2, 13b).

**7. The case being, linkages with any other issue**

Mobile technology can be further used by supporting specific application functions. For example in Nigeria, a small start-up company called 'Hello tractor' provides services in connecting potential service providers in field services with potential clients in a certain location or district.

**8. Additional Supporting Information***Additional information*

Other institutions such as CTA, the ACP Secretariat, the European Commission (DG DEVCO/DGAGRI), Concord, PAFO, Agricorn and CEMA recently organized the Brussels Policy Briefing n. 45. and are also working with interest in this evolving topic and have recently conducted a special event on 'Affordable smart farming solutions for Africa: the next driver for African agriculture smart farming: A key driver for investment in Africa'. FAO participated and presented its views as outlined above.

*Evidence*

There is sufficient evidence for using ICT and electronic vouchers for agricultural inputs distribution in the context of emergency response, for example in Zimbabwe. To date there was little evidence on using a similar approach for using electronic vouchers for agricultural services, such as for land preparation, planting, maybe weeding, harvesting, postharvest handling and transport of harvested goods. Yet, it is these tasks that make agricultural work very hard and laborious especially for the poorest of the poor, women, children and elderly. FAO has started on a pilot scale through its field programme in Zambia to build up the required data sets of social settings of smallholders farmers, mapping out smallholders fields and equipping field service providers with tracking technology. On a pilot scale, it is now possible for smallholders to receive services related to mechanized conservation agriculture and hence replace the hand labour based arduous basin systems with mechanized services driven by ICT technology.

<sup>94</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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### *Knowledge gaps*

This technology setting of providing field services with ICT, GPS and mobile technology support is still in a pilot stage. Building up the required data pools means a lot of groundwork. Yet with the help of partnerships with e.g. Google Earth and other private sector stakeholders and with support from donors who are keen on monitoring its field programmes, it will be possible to move on from piloting to larger scale implementation of this technology.

In the long term, this work should be embedded in a Sustainable Agricultural Mechanization Strategy for furthering its interconnectedness to food security and nutrition.

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FAO SAM website

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization of the United Nations (FAO)		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37S Food security in many regions is undermined by water scarcity. This situation is exacerbated by climate change.</i>		
Description of the issue <i>in less than 5 lines</i>	Water is a critical factor in food production. There is unprecedented pressure on water resources. Water withdrawals have grown more than twice the rate of population in the 20th century. Globally, agriculture is the largest user of water and accounts for 70 percent of all water withdrawal. Some countries with rapidly growing demand for food are also those that face high levels of water scarcity.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<p>AQUASTAT (FAO's Global Water Information system) provides two indicators of pressure on the renewable water resources.</p> <p>1. Renewable freshwater resources per person. Water stress starts when the water available in a country drops below 1 700 m<sup>3</sup>/year or 4 600 litres/day per person. When the 1 000 m<sup>3</sup>/year or about 2 700 litres/day per person threshold is crossed, water scarcity is experienced. Absolute water scarcity is considered for countries with less 500 m<sup>3</sup>/year or roughly 1 400 litres/day per person. By this definition, 49 countries are water stressed, 9 of which experience water scarcity and 21 absolute water scarcity.</p> <p>2. Freshwater withdrawal as percentage of</p>		

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	<p>renewable water resources :Countries could be defined as water-stressed if they withdraw more than 25 percent of their renewable freshwater resources, as approaching physical water scarcity when more than 60 percent is withdrawn, and as facing severe physical water scarcity when more than 75 percent is withdrawn. Using these thresholds, water stress is progressing with 36 countries experiencing it in 1998 and 41 countries in 2011. Out of the 41 countries withdrawing more than 25 percent, 21 withdraw more than 60 percent and of these 15 withdraw more than 75 percent. Ten countries withdraw more than 100 percent of renewable freshwater resources, of which 7 in the Arabian Peninsula, 1 in Northern Africa and 2 in Central Asia.</p>
Main response proposed to address the issue	<p>Response options are both on the supply and the demand side. For managing supply, the options are increase storage, groundwater development, recycling and re-use, pollution control and desalination. In demand management, the options are divided into re-allocation and increased efficiency of use.</p> <p>The report Water for food security and nutrition by HLPE proposes eight main domains for action:</p> <ol style="list-style-type: none"> <li>1. The sustainable management and conservation of ecosystems, from local to continental levels as key to ensure quantity and quality of water for food security and nutrition in the future.</li> <li>2. Designing integrated policy approaches to enable proper prioritization for FSN</li> <li>3. Putting the most vulnerable and marginalized on top of concerns for policy and action.</li> <li>4. Improving water management in agriculture, both rainfed and irrigated, and agricultural management to deal with water scarcity to improve agricultural systems' efficiency and resilience.</li> <li>5. Improve the contribution of trade to water for FSN</li> <li>6. Knowledge and technologies</li> <li>7. Inclusive and effective governance</li> <li>8. Promoting a rights-based approach to water for FSN.</li> </ol>

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Main actor(s) concerned or involved in the response proposed

National governments especially Ministries of Environment and Agriculture, local governments, farmers, water user groups, private sector, international agencies and donors, corporate actors from energy and industrial sectors, cities, local organizations, civil society.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Water scarcity is caused by both external (demographic pressure, economic development, pollution, urbanization, climate change) and internal drivers (unsustainable irrigation practices, expansion of irrigated land, lack of investment, etc.)

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	x	X	X	
Nature of the main impact of the issue on FSN	x	x	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Farmers suffer from water scarcity because of a mixture of environmental economic, social and institutional factors. Water scarcity is dynamic and varies in time as a result of natural hydrological variability, but also as a function of prevailing economic, policy, planning and management approaches.

## 3. Attributes of the Issue

	Classification (**)			
1105. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1106. Breadth: Are there many people affected?	Few		Many	
1107. Scale: local/national/regional/global?	Local	National	Regional	Global

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	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)			
1108. Impact on Availability	— —		
1109. Impact on Access	— —		
1110. Impact on Utilization/ nutrition	— —		
1111. Impact on Stability	— —		
1112. Impact on most vulnerable people	Agricultural Water Management is key to increasing and stabilizing incomes and maintaining the livelihoods of small holders farmers who are still locked in a poverty trap of high vulnerability and climatic uncertainty.		
1113. Impact on women	— —		
1114. Impact on children	— —		
1115. Impact on marginalized populations	Inclusive and equitable water governance is key to ensure FSN of poor and marginalized communities.		
1116. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Water is essential to food security and nutrition. Improving water management in agriculture will enhance productivity of agriculture and food systems for FSN (availability, access, stability, nutrition. Securing access to water can be particularly challenging for smallholders, vulnerable and marginalized populations and women.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There is unprecedented pressure on water resources and an increasing number of regions are reaching the limit at which reliable water services can be delivered. The impact of climate change adds significant uncertainty to the availability of water in many regions.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

In the recent past, extensive reviews have been undertaken on the main issues related to water scarcity and food security (AQUASTAT, CA 2007, FAO SOLAW 2011)

#### **6. Linkages with SDGs (1 to 17)<sup>95</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDGs include a dedicated goal on water and sanitation (SDG6) that sets out to "ensure availability and sustainable management of water and sanitation for all". With water at the very core of sustainable development, SDG 6 does not only have strong linkages to all of the other SDGs, but also the ability to underpin them.

#### **7. The case being, linkages with any other issue**

Water scarcity, accelerated by climate change may threaten international peace and security as well as resulting in immigration from rural areas.

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

FAO AQUASTAT – FAO Global information system on water and agriculture.  
<http://www.fao.org/nr/water/aquastat>.

<sup>95</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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*Knowledge gaps*

In many countries, there is still lack of basic data, particularly in relation to groundwater and water quality, as well as gender disaggregated data.

*References*

HLPE, 2015. Water for food security and nutrition. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome 2015.

FAO, 2012. Coping with water scarcity. An action framework for agriculture and food security.

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Comprehensive Assessment of Water Management in Agriculture. 2007. Water for Food, Water for Life: A Comprehensive Assessment of Water Management in Agriculture. London: Earthscan, and Colombo: International Water Management Institute.



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Food and Agriculture Organization of the United Nations (FAO)		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K37T Threatened ecosystem services are impacting on ecosystem health and resilience, limiting options for sustainable agriculture in a world facing a growing population and diminishing natural resource base.</i>		
Description of the issue <i>in less than 5 lines</i>	Agricultural production, whether for crops, animal or fish, depends on a healthy ecosystem and the ecosystem services this provides. In many parts of the world, ecosystem services are threatened. This has impacts on ecosystem health and sustainable agricultural productivity.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge x		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Many key ecosystem services, such as fresh water, climate regulation, erosion regulation, nutrient cycling, pest regulation and pollination, <i>sustain agricultural productivity</i> and ensure ecosystem health and resilience. In many parts of the world, ecosystem services are threatened, and will be increasingly so in the medium and long-term. Numerous literature is available on this issue which has increasingly come to the attention of global fora and global/national/localized initiatives and practices (e.g. MEA, TEEB, Aichi Biodiversity Targets, SDG's, IPBES, IT-PGRFA, State of the World Assessments, LADA, payments/incentives for ecosystem services, certification schemes, ecological intensification, agroecology).		

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Main response proposed to address the issue	Main responses are at different levels: global/regional/national/farm to policy/land use planning/monitoring and management of ecosystem services within the agroecosystem. Collectively, there needs to be a commitment to work both at local and transboundary levels to move towards ecosystems-based agriculture.
Main actor(s) concerned or involved in the response proposed	Governments (across sectors (e.g. agriculture, environment, forestry, fisheries, livestock, water, land-use planning, financing, national accounting)), land managers, farmers and farmer organizations, farm advisers, educators, researchers.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	x	x	Mainly internal, but climate change also impacts ecosystems and the services they provide (such as pollination). Also, threatened ecosystem services can themselves contribute to some external drivers (e.g. flooding, land degradation).

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	x	x	x	
Nature of the main impact of the issue on FSN	x	x	x	x	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Endangered ecosystem services disrupt agricultural production and reduce ecosystems' resilience, impacting people's livelihoods (especially in vulnerable areas).

## 3. Attributes of the Issue

	Classification (**)	
1117. Depth: Is it relevant to food and nutrition systems as a whole, or to specific	Critical point	Systemic issue x

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parts of those systems?				
1118. Breadth: Are there many people affected?	Few			Many x
1119. Scale: local/national/regional/global?	Local x <i>Farm level</i>	National x <i>Policies and support to farmers and land managers</i>	Regional x <i>Regional collaboration and policy development /implementation (most ecosystem services are transboundary)</i>	Global x
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1120. Impact on Availability	--			
1121. Impact on Access	--			
1122. Impact on Utilization/ nutrition	--			
1123. Impact on Stability	--			
1124. Impact on most vulnerable people	--			
1125. Impact on women	-			
1126. Impact on children	-			
1127. Impact on marginalized populations	--			
1128. Cost to address the issue	Low	Middle x	High x	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
There are four categories of ecosystem services: provisioning, regulating, supporting and cultural. These are all interlinked and their degradation affects not only agricultural production but also the environment, nutritional availability for people, access and stability, as well as impacting on economic growth (household and global levels).

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	x	x	x

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

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Ecosystem services are already threatened, and impacts are already being felt, such as pollinator declines, soil degradation, climate change, fisheries sectors...some of these can be tackled as to have short-term (and possibly more localized) positive impact (such as pollination or nutrient cycling), but most are medium or long-term (such as water quality, soil health, climate regulation).

### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle x	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Although there is already robust evidence of threats to ecosystem services, the range of these are wide and more scientific knowledge and monitoring is needed. One recent article posits that: *"...food utilization, access and stability, which are the major food security challenges in the world, remained under-investigated. There is a major bias on food availability in relation to crop production, and most articles assumed that food security would improve by increasing crop productivity, but this hypothesis remained largely untested."* (<http://www.sciencedirect.com/science/article/pii/S2212041616300717>, and see references, below)

### 6. Linkages with SDGs (1 to 17)<sup>96</sup>

Most relevant SDG's:

1 (end poverty), 2 (end hunger), 3 (healthy lives), 6 (water), 12 (consumption and production), 14 (oceans, seas and marine resources) and 15 (terrestrial, forests, biodiversity)

Linked to SDG's:

7 (energy), 8 (sustainable economic growth), 9 (infrastructure, innovation), 10 (reduce inequality) and 13 (climate change)

<sup>96</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/> and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## **7. The case being, linkages with any other issue**

## **8. Additional Supporting Information**

### *Additional information*

Millennium Ecosystem Assessment. <http://www.millenniumassessment.org/en/index.html>

Aichi Biodiversity Targets. <https://www.cbd.int/sp/targets/>

Sustainable Development Goals.

<https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals>

Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES). <http://www.ipbes.net/>

International Treaty on Plant Genetic Resources for Food and Agriculture.

<http://www.fao.org/plant-treaty/en/>

State of the World Assessments:

- Fisheries and Aquaculture: <http://www.fao.org/3/a-i5555e.pdf>
- Plant Genetic Resources for Food and Agriculture:  
<http://www.fao.org/docrep/013/i1500e/i1500e00.htm>
- Animal Genetic Resources for Food and Agriculture: <http://www.fao.org/3/a-i4787e.pdf>
- Forest Genetic Resources: <http://www.fao.org/3/a-i3825e.pdf>

The Economics of Ecosystems and Biodiversity (TEEB). <http://www.teebweb.org/>

FAO. Biodiversity and Ecosystem Services. <http://www.fao.org/ecosystem-services-biodiversity/background/en/>

Land Degradation Assessment in Drylands. <http://www.fao.org/nr/lada/>

World Water Assessment Programme. <http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/>

CGIAR – WLE: <https://wle.cgiar.org/project/managing-ecosystem-services-food-security-and-nutritional-health-rural-poor-forest>

*Evidence**Knowledge gaps*

There are four categories of ecosystem services – supporting (e.g., soil fertility), regulating (e.g., pest control and crop pollination), provisioning (food, fiber, and energy) and cultural – and within each category are the ecosystem services themselves (e.g. below-ground biodiversity, pollinators, genetic resources, fresh water, climate regulation, etc.). Knowledge gaps exist with regards to each ecosystem service, their interactions within the land/waterscape, and their roles/within the agroecosystem, for improving sustainable food production. It is therefore very complex to identify knowledge gaps, as these are context-specific. Nevertheless, the knowledge gaps do exist. Here, we identify a few – they are the need for more knowledge on:

- ecological underpinning of ecosystem services
- the role of biodiversity in ecosystem services
- drivers that affect ecosystems and their services
- biological traits and ecosystem services
- need for targeted observational and experimental research conducted over large spatial and temporal scales
- quantification and valuation of ecosystem services:
- mapping and assessing ecosystem services
- indicators and traits-based approaches for ecosystem service assessment:
- habitat management and conservation policy
- systems thinking (consider also agroforestry systems, integrated landscape management, etc. and interactions between services)

(see:

- [http://sesss05.setac.eu/embed/sesss05/16\\_Pam\\_Berry\\_-\\_Mind\\_the\\_gap-missing\\_data\\_and\\_knowledge\\_gaps\\_for\\_ecosystem\\_service\\_assessment.pdf](http://sesss05.setac.eu/embed/sesss05/16_Pam_Berry_-_Mind_the_gap-missing_data_and_knowledge_gaps_for_ecosystem_service_assessment.pdf)
- [http://www.rubicode.net/rubicode/RUBICODE\\_Roadmap\\_of\\_Research\\_Needs.pdf](http://www.rubicode.net/rubicode/RUBICODE_Roadmap_of_Research_Needs.pdf)
- [http://ec.europa.eu/environment/integration/research/newsalert/pdf/ecosystem\\_services\\_biodiversity\\_IR11\\_en.pdf](http://ec.europa.eu/environment/integration/research/newsalert/pdf/ecosystem_services_biodiversity_IR11_en.pdf) )

For crop production, research efforts and investments are particularly needed to reduce existing yield gaps by integrating context-appropriate bundles of ecosystem services into crop production systems. Despite a recent surge in research on ecosystem services, actual hands-on integration of ecosystem service management into crop production systems is still missing. In particular, more needs to be known about the dynamics of service-providing communities over time and how this affects the stability and resilience of services and crop productivity.

Nearly all studies to date have examined a single service process in isolation and the effects of combinations of processes are implicitly considered to be additive or stacked. It has never been tested whether suites of below- and aboveground services contribute synergistically, or trade off, in their contribution to crop yield and quality. For successful management of multiple services, more information is needed about how land use and other environmental factors affect the distribution, abundance, and community composition of organisms that contribute to crop production.

Agricultural landscapes deliver more services besides crop production, such as climate regulation, water regulation, and biodiversity conservation, many of which give benefits at regional or global scales. 'Multifunctional agriculture' is emerging an important research topic to quantify these benefits and propose strategies to encourage farmers and land managers to support them.



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(Taken directly from:

[https://www.researchgate.net/profile/Riccardo\\_Bommarco/publication/233422907\\_Ecological\\_Intensification\\_Harnessing\\_Ecosystem\\_Services\\_for\\_Food\\_Security/links/5416d1660cf2fa878ad42b9e.pdf](https://www.researchgate.net/profile/Riccardo_Bommarco/publication/233422907_Ecological_Intensification_Harnessing_Ecosystem_Services_for_Food_Security/links/5416d1660cf2fa878ad42b9e.pdf) )

Finally, if a major objective of ecosystem services science is to effectively inform the design and implementation of future agrarian policies, scientists should promote a holistic methodological framework that (1) evaluate ecosystem services diversity and trade-offs; (2) embrace the multidimensional nature of values; (3) analyze supply and demand through the use of different approaches, and on the basis of primary data; and (4) consider the inherent uncertainty in agroecosystems by analyzing the effects of different management options on the changing ecological, social, and monetary attributes over time.

(Taken directly from: <http://www.sciencedirect.com/science/article/pii/S1462901113001809>)

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Jansson, Å., and S. Polasky. 2010. Quantifying biodiversity for building resilience for food security in urban landscapes: getting down to business. *Ecology and Society* 15(3): 20. [online] URL: <http://www.ecologyandsociety.org/vol15/iss3/art20/>

Meybeck, A. and Place, F. 2013. Food security and sustainable resource use – what are the resource challenges to food security?. Background paper for “Food security futures: research priorities for the 21<sup>st</sup> century”.

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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Power, Alison G. Ecosystem services and agriculture: tradeoffs and synergies  
Phil. Trans. R. Soc. B 2010 365 2959-2971; DOI: 10.1098/rstb.2010.0143. Published 16 August 2010

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Special Section - Ecosystem Services and Agriculture — Ecosystem Services and Agriculture

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Volume 64, Issue 2, 15 December 2007, Pages 253–260  
Special Section - Ecosystem Services and Agriculture — Ecosystem Services and Agriculture



## HLPE Inquiry

Critical and Emerging Issues for Food Security and Nutrition

Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	<b>Food and Agriculture Organization of the United Nations (FAO)</b>	
Do you answer on behalf of your institution, or as an individual?	On behalf	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International	

### 1. Overview of the issue

Issue in 2 lines	<i>K37U Pollinator declines and pollination management</i>		
Description of the issue in less than 5 lines	Pollination is an important ecosystem service essential not only to food production but in particular high nutritional-value crops. Pollinator populations (abundance and diversity) are declining (especially wild pollinators) for various reasons including habitat loss, unsustainable agricultural practices and diseases, that often interact.		
Is the issue a challenge and/or an opportunity for FSN? Please tick the appropriate box	Challenge x		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	Declining pollinator populations has been internationally recognized as an issue since CBD COP III/11. In 2000, the International Pollinator Initiative was established (under the CBD Programme of Work on Agricultural Biodiversity). In February 2016, the thematic assessment on "Pollinator, pollination and food production" of the IPBES was presented at the IPBES Plenary. It was the first thematic assessment prepared by IPBES, confirming the importance of the issue.		

Main response proposed to address the issue	<p>(Extracted from the IPBES Summary Report to Policy Makers)</p> <p>(i) Improving current conditions for pollinators and/or maintaining pollination (utilize immediate opportunities; manage immediate risks);</p> <p>(ii) Transforming agricultural landscapes (ecologically intensify agriculture through active management of ecosystem services; strengthen existing diversified farming systems; invest in ecological infrastructure);</p>
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	(iii) Transforming society's relationship with nature (integrate peoples' diverse knowledge and values into management).
Main actor(s) concerned or involved in the response proposed	Government ((national/local) pro-pollinator policies, across sectors (e.g. agriculture and environment)), land-use planners, land managers, farmers, farmer organizations, farm advisers, educators, indigenous populations, researchers.

For the public inquiry fields below are optional

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		x	Mainly internal, but climate change also impacts pollinators

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	x	x	x	
Nature of the main impact of the issue on FSN	x	x	x	x	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

Pollination is an important ecosystem service. 75% of our food crops and nearly 90% of wild flowering plants depend at least to some extent on animal pollination and a high diversity of wild pollinators is critical to pollination even when managed bees are present in high numbers. Some management practices contribute to maintenance/enhancement of other ecosystem services. The annual market value of the 5-8 per cent of production that is directly linked with pollination services is estimated at \$235 billion-\$577 billion (in 2015 US\$) worldwide. Pollination contributes to human livelihoods and has social benefits as well, such as cultural value. Governance plays an important role for example in the development of pro-pollinator policy, or supporting schemes such as organic certification or payments for ecosystem services.

## 3. Attributes of the Issue

	Classification (**)	
1129. Depth: Is it relevant to food and nutrition systems as a whole, or to specific	Critical point x	

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parts of those systems?				
1130. Breadth: Are there many people affected?				Many x
1131. Scale: local/national/regional/global?	Local x	National x	Regional x	Global x
	Farm level	Policies	Regional pollinator initiatives	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1132. Impact on Availability	--			
1133. Impact on Access	0			
1134. Impact on Utilization/ nutrition	--			
1135. Impact on Stability	-			
1136. Impact on most vulnerable people	Yield in smallholder farms improves with increased diversity and abundance of wild pollinator populations (see references: Science. Vol. 351, Issue 6271, pp. 388-3912016)			
1137. Impact on women				
1138. Impact on children				
1139. Impact on marginalized populations	Specify as appropriate			
1140. Cost to address the issue	Low	Middle x	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required.  
Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

Timeframe (*)	Now/Short term (1-5 years)	Medium term (5-10 years)	Long term (10-20 years +)
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	x	x	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

#### 5. Degree of confidence

Solidity of currently available knowledge base.			High x
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The IPBES report has the most current and scientific and evidence-based information. In the report however, it is acknowledged that for some aspects the current knowledge available is not enough.

#### 6. Linkages with SDGs (1 to 17)<sup>97</sup>

Most relevant SDG's:

2 (end hunger), 3 (healthy lives), 12 (consumption and production) and 15 (terrestrial, forests, biodiversity)

Linked to SDG's:

8 (sustainable economic growth), 9 (infrastructure, innovation) and 13 (climate change)

#### 7. The case being, linkages with any other issue

#### 8. Additional Supporting Information

Additional information

CBD COP Decisions III/11; V/5; VI/5

FAO Global Action on Pollination Services for Sustainable Agriculture  
([www.fao.org/pollination/resources](http://www.fao.org/pollination/resources))

Other initiatives (international, national, other major activities (refer to:  
<http://www.fao.org/pollination/major-initiatives/en/>)

<sup>97</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

## Evidence

IPBES First Thematic Assessment on “Pollinator, Pollination and Food Production”

(summary for policy makers:

[http://www.ipbes.net/sites/default/files/downloads/pdf/spm\\_deliverable\\_3a\\_pollination\\_20161124.pdf](http://www.ipbes.net/sites/default/files/downloads/pdf/spm_deliverable_3a_pollination_20161124.pdf))

Garibaldi, L. A. et al. 2016. Mutually beneficial pollinator diversity and crop yield outcomes in small and large farms. *Science*. Vol. 351, Issue 6271, pp. 388-391  
DOI: 10.1126/science.aac7287

Roubik, D.W. (ed.). Pollinator safety in agriculture. FAO. 2014.

Lucas A. Garibaldi et al. Wild Pollinators Enhance Fruit Set of Crops Regardless of Honey Bee Abundance. *Science* 339, 1608 (2013). DOI: 10.1126/science.1230200

## Knowledge gaps

The recent (February 2016) IPBES thematic assessment on pollinators, pollination and food production, in its Summary for Policy Makers (SPM), addresses and assessed issues on: (i) values of pollinators and pollination; (ii) status and trends in pollinators, pollination and pollinator-dependent crops and wild plants; and (iii) drivers of change, risks and opportunities and policy and management options, according to the degree of confidence (four levels).

These are:

Well established: comprehensive meta-analysis or other synthesis or multiple independent studies that agree.

Established but incomplete: general agreement although only a limited number of studies exist; no comprehensive synthesis and/or the studies that exist address the question imprecisely.

Unresolved: multiple independent studies exist but conclusions do not agree.

Inconclusive: limited evidence, recognizing major knowledge gaps.

“Headline” issues that are either established but incomplete, unresolved or inconclusive are those where there are knowledge gaps. They include:

- 1) Animal pollination plays a vital role as a regulating ecosystem service in nature. An estimated 87.5 per cent (approximately 308,000 species) of the world’s flowering wild plants depend, at least in part, on animal pollination for sexual reproduction, and this ranges from 94 per cent in tropical communities to 78 per cent in temperate zone communities (established but incomplete).
- 2) The annual market value of the 5-8 per cent of production that is directly linked with pollination services is estimated at \$235 billion-\$577 billion (in 2015 US\$) worldwide (established but incomplete).
- 3) Many livelihoods depend on pollinators, their products and their multiple benefits (established but incomplete).
- 4) Diversified farming systems, some linked to indigenous and local knowledge, represent an important pollinator-friendly addition to industrial agriculture and include swidden, home garden, commodity agroforestry and bee farming systems (established but incomplete).
- 5) A number of cultural practices based on indigenous and local knowledge contribute to supporting an abundance and diversity of pollinators and maintaining valued “biocultural diversity” (for the purposes of this assessment, biological and cultural diversity and the links between them are referred to as “biocultural diversity”) (established but incomplete).

- 6) Many wild bees and butterflies have been declining in abundance, occurrence and diversity at local and regional scales in North-West Europe and North America (established but incomplete); data for other regions and pollinator groups are currently insufficient to draw general conclusions, although local declines have been reported.
- 7) An objective evaluation of the status of a species is The International Union for Conservation of Nature (IUCN) Red List assessment. Global assessments are available for many vertebrate pollinators, e.g., birds and bats. An estimated 16.5 per cent of vertebrate pollinators are threatened with global extinction (increasing to 30 per cent for island species) (established but incomplete), with a trend towards more extinctions (well established). Most insect pollinators have not been assessed at the global level (well established). Regional and national assessments of insect pollinators indicate high levels of threat, particularly for bees and butterflies (often more than 40 per cent of species threatened) (established but incomplete).
- 8) A wealth of observational, empirical and modelling studies worldwide point to a high likelihood that many drivers have affected, and are affecting, wild and managed pollinators negatively (established but incomplete).
- 9) Habitat destruction, fragmentation and degradation, along with conventional intensive land management practices, often reduce or alter pollinators' food (well established) and nesting resources (established but incomplete).
- 10) Responses known to reduce or mitigate negative agricultural impacts on pollinators include organic farming and planting flower strips, both of which increase local numbers of foraging pollinating insects (well established) and pollination (established but incomplete).
- 11) Greater landscape-scale habitat diversity often results in more diverse pollinator communities (well established) and more effective crop and wild plant pollination (established but incomplete).
- 12) Managing and mitigating the impacts of pollinator decline on people's good quality of life could benefit from responses that address loss of access to traditional territories, loss of traditional knowledge, tenure and governance, and the interacting, cumulative effects of direct drivers (established but incomplete).
- 13) Managing urban and recreational green spaces to increase the local abundance of nectar providing and pollen-providing flowering plants increases pollinator diversity and abundance (established but incomplete), although it is unknown whether this has long-term benefits at the population level.
- 14) Pesticides, particularly insecticides, have been demonstrated to have a broad range of lethal and sublethal effects on pollinators under controlled experimental conditions (well established). The few available field studies assessing effects of field realistic exposure provide conflicting evidence of effects based on the species studied and pesticide usage (established but incomplete). It is currently unresolved how sublethal effects of pesticide exposure recorded for individual insects affect colonies and populations of managed bees and wild pollinators, especially over the longer term.
- 15) Risk assessment of specific pesticide ingredients and regulation based on identified risks are important responses that can decrease the environmental hazard from pesticides used in agriculture at the national level (established but incomplete).
- 16) Most agricultural genetically modified organisms (GMOs) carry traits for herbicide tolerance (HT) or insect resistance (IR). Reduced weed populations are likely to accompany most herbicide-tolerant (HT) crops, diminishing food resources for pollinators (established but



incomplete). The actual consequences for the abundance and diversity of pollinators foraging in herbicide-tolerant (HT)-crop fields is unknown. Insect-resistant (IR) crops result in the reduction of insecticide use, which varies regionally according to the prevalence of pests, and the emergence of secondary outbreaks of non-target pests or primary pest resistance (well established). If sustained, this reduction in insecticide use could reduce pressure on non target insects (established but incomplete). How insect-resistant-(IR) crop use and reduced pesticide use affect pollinator abundance and diversity is unknown.

- 17) Insect pollinators suffer from a broad range of parasites, with Varroa mites attacking and transmitting viruses among honey bees being a notable example (well established). Emerging and re-emerging diseases (e.g., due to host shifts of both pathogens and parasites) are a significant threat to the health of honey bees (well established), bumble bees and solitary bees (established but incomplete for both groups) during the trade and management of commercial bees for pollination.
- 18) The many drivers that directly impact the health, diversity and abundance of pollinators, from the gene to the biome scales, can combine in their effects and thereby increase the overall pressure on pollinators (established but incomplete).
- 19) Indigenous and local knowledge systems, in co-production with science, can be a source of solutions for the present challenges confronting pollinators and pollination (established but incomplete).
- 20) Many actions to support pollinators are hampered in their implementation through governance deficits, including fragmented multi-level administrative units, mismatches between finescale variation in practices that protect pollinators and homogenizing broad-scale government policy, contradictory policy goals across sectors and contests over land use (established but incomplete).
- 21) Declines in the number of managed western honey bee colonies are due in part to socio-economic changes affecting beekeeping and/or poor management practices (unresolved).

The entire SPM report

([http://www.ipbes.net/sites/default/files/downloads/pdf/spm\\_deliverable\\_3a\\_pollination\\_20161124.pdf](http://www.ipbes.net/sites/default/files/downloads/pdf/spm_deliverable_3a_pollination_20161124.pdf)) presents a greater granularity with regards to knowledge gaps.

*(Some additional) References*

Gemmill-Herren, B. (ed.). Pollination services to agriculture: sustaining and enhancing a key ecosystem service. 2016. FAO with Routledge.

FAO. 2016. Protocol to detect and monitor pollinator communities: Guidance for practitioners. Rome.

FAO. 2016. A quantitative approach to the socio-economic valuation of pollinator-friendly practices: a protocol for its use. Rome.

FAO. 2015. Policy analysis paper: policy mainstreaming of biodiversity and ecosystem services with a focus on pollination.

Kjøhl, M., Nielsen, A. & Stenseth, N.C. Potential effects of climate change on crop pollination. FAO. 2011.

Vaissière, B., Freitas, B. & Gemmill-Herren, B. Protocol to detect and assess pollination deficits in crops: A handbook for its use. FAO. 2011.



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Chinese Academy of Agricultural Sciences(CAAS)		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	China		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K38A Food security and poverty reduction		
Description of the issue <i>in less than 5 lines</i>	It is estimated that there are still 792.5 million undernourished people in the world, accounting for 10.8% of the whole population; 702 million people under extreme poverty line. No poverty and zero hunger are the first and second goal of SDGs.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Reviewing literatures and key reports published by UN. Such as overall framework of the 2030 Agenda, 17 SDGs, ICN2 framework for action, and the UN Decade of Action on Nutrition.		
Main response proposed to address the issue	It is more an institutional issue. To a large extent, global food production has kept up with the demands of a growing human population, but inequalities remain in regional and national distribution of the available food. International organizations and national government should put forward more pro-poor policies and actions to combat hunger and poverty.		

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Main actor(s) concerned or involved in the response proposed

FAO, WFP, WHO, UNDP and many other related organizations in UN. National governments.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Poverty and nutrition could be a driver and also an outcome of food systems.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	√	√		√	
Nature of the main impact of the issue on FSN	√	√		√	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Poverty itself is an economic, social, and institutional, human right issue, as well as food and nutrition security. However, by achieving zero hunger and poverty, active returns will be giving to economic, social, and human rights dimensions as well.

## 3. Attributes of the Issue

	Classification (**)			
1141. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1142. Breadth: Are there many people affected?	Few		Many	
1143. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1144. Impact on Availability	+
1145. Impact on Access	++
1146. Impact on Utilization/ nutrition	+
1147. Impact on Stability	+

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1148. Impact on most vulnerable people	+ poor people		
1149. Impact on women			
1150. Impact on children			
1151. Impact on marginalized populations	Poor people		
1152. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Poverty reduction will increase the affordability, which is part of the accessibility, and help poor people to resilient from shock that would have impact on their food and nutrition security.

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			✓
Moment to act to address the issue			✓

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Even though zero hunger and eliminating poverty has been put as the first two goals of SDGs, this issue is more institutional and need more time to change. Facing with shocks like extreme environment, scarce resources, wars, and widening gaps of rich and poor at the same time, it need long time to continuously act to the issue.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Although overall poor and nutrition insecure population of each country were estimated every year by FAO. National traceable database of poor and food insecure people was far from well-established at national level. Effective interventions to deal with the issue still need local-based research to support.

#### 6. Linkages with SDGs (1 to 17)<sup>98</sup>

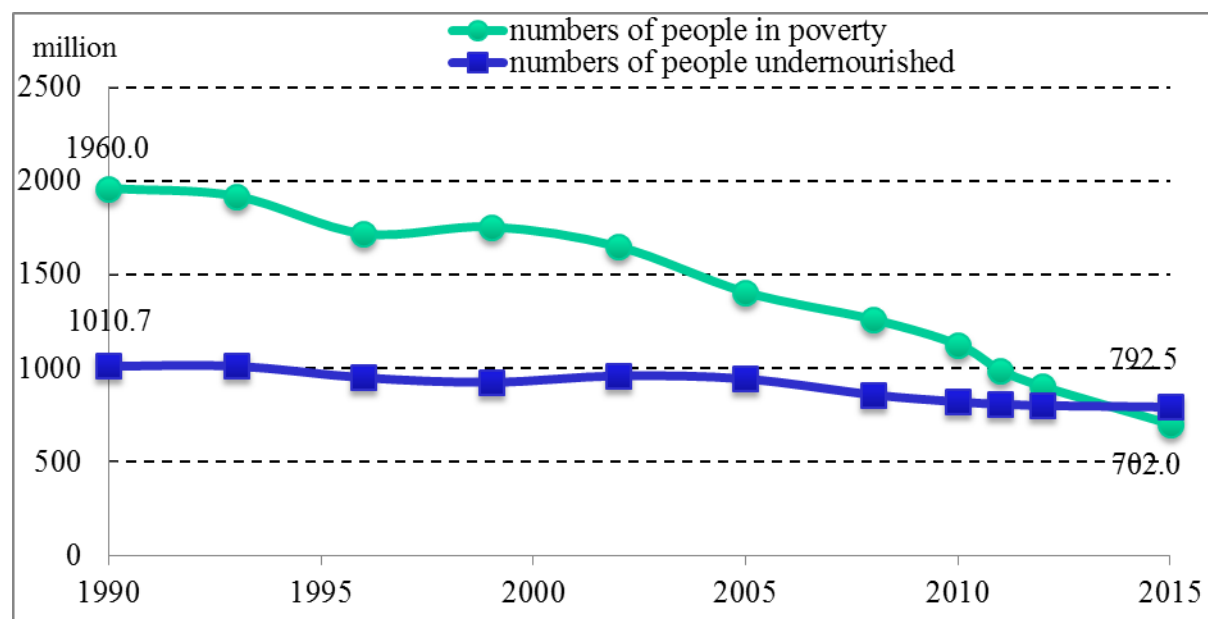
<sup>98</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG1: No poverty

SDG2: Zero Hunger



#### 7. The case being, linkages with any other issue

#### 8. Additional Supporting Information

*Additional information*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Evidence*

*Knowledge gaps*

Relationship of poverty and food and nutrition security;  
Determinants of food consumption decision;  
Reason of returning to poverty and food insecurity and effective and durable ways to eliminate poverty.

*References*

Mullainathan S, Shafir E. Scarcity: Why having too little means so much[M]. Macmillan, 2013.  
Steenkamp JBEM. Dynamics in consumer behavior with respect to agricultural and food products[M]//Agricultural marketing and consumer behavior in a changing world. Springer US, 1997: 143-188.

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## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Chinese Academy of Agricultural Sciences (CAAS)		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	China		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K38B Imbalanced development of regional food security and nutrition</i>		
Description of the issue <i>in less than 5 lines</i>	To change the imbalance in regional development of global food security and nutrition improvement Developed countries: obesity, over weight Developing countries: undernutrition, micronutrients deficiency Focus on vulnerable groups of people: poor people, old people, women, children.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	Reviewing <i>status of food insecurity of the world, and nourishing millions.</i>		

Main response proposed to address the issue	International cooperation; PPPs; Pro-poor interventions.
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Main actor(s) concerned or involved in the response proposed

International and regional organizations and NGOs;  
National and local governments;  
Enterprises.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		√	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue		√		√	
Nature of the main impact of the issue on FSN	√	√			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Inequality is a social and institutional issue faced by the world, it will influence economic output and social stability.

## 3. Attributes of the Issue

	Classification (**)			
1153. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1154. Breadth: Are there many people affected?	Few		Many	
1155. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1156. Impact on Availability	0			
1157. Impact on Access	—			
1158. Impact on Utilization/ nutrition	—			
1159. Impact on Stability	0			



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1160. Impact on most vulnerable people	— —		
1161. Impact on women	—		
1162. Impact on children	—		
1163. Impact on marginalized populations	— —		
1164. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Inequality influencing the marginalized and vulnerable people the most, poor and nutrition insecure conditions will make them fall into scarcity, and have less chance to get rid of poverty in the future, which is a vicious spiral.

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			✓
Moment to act to address the issue			✓

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Imbalanced situation could be hardly changed in a short time, it need more powerful and sound social security nets, and need social consensus that someone need to sacrifice a little to help others.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Debates on fairness and efficiency never stop, not only among academic researchers, but also in the real world. Different government/party holds different opinion on this issue and put forward totally adverse policies.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

#### **6. Linkages with SDGs (1 to 17)<sup>99</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Most relevant SDGs:

SDG1 No poverty

SDG2 Zero Hunger

SDG

Existing links with:

SDG3 Good health and well being?

SDG5 Gender equality

SDG10: Reduce inequalities within and among countries

#### **7. The case being, linkages with any other issue**

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>99</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

Trade-offs of narrowing down the development gaps and pursuing efficiency and self-profit maximize.

*References*

FAO IFAD WFP (2014) The state of food insecurity in the world 2014: strengthening the enabling environment for food security and nutrition[J]. FAO, Rome.

Nourishing millions: Stories of change in nutrition[M]. Intl Food Policy Res Inst, 2016.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Chinese Academy of Agricultural Sciences (CAAS)		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	China		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	K38C Food price crisis		
Description of the issue <i>in less than 5 lines</i>	The important way to avoid food price crisis is to improve the ability to control the financial risks of food market.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	Reviewing past food crisis, and literatures of analyzing impact of food prices change on food security.		

Main response proposed to address the issue	Early warning system Social safety net
---	---

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

National governments;  
Researchers.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	√		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	√				
Nature of the main impact of the issue on FSN	√				

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1165. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1166. Breadth: Are there many people affected?	Few		Many	
1167. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1168. Impact on Availability	—			
1169. Impact on Access	— —			
1170. Impact on Utilization/ nutrition	—			
1171. Impact on Stability	— —			

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1172. Impact on most vulnerable people	— — poor people		
1173. Impact on women	—		
1174. Impact on children	—		
1175. Impact on marginalized populations	— —		
1176. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Poor people suffered the most from food price changes (Robles and Torero, 2010; Cudjoe et al., 2008) .

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			√
Moment to act to address the issue		√	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Food prices is determined by the market and can hardly be controlled the government, but actions like building early-warning system can be helpful to diminish the negative impact giving by food price dramatic change. In addition, food subsidies can be given to poor people when food price increase.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>100</sup>

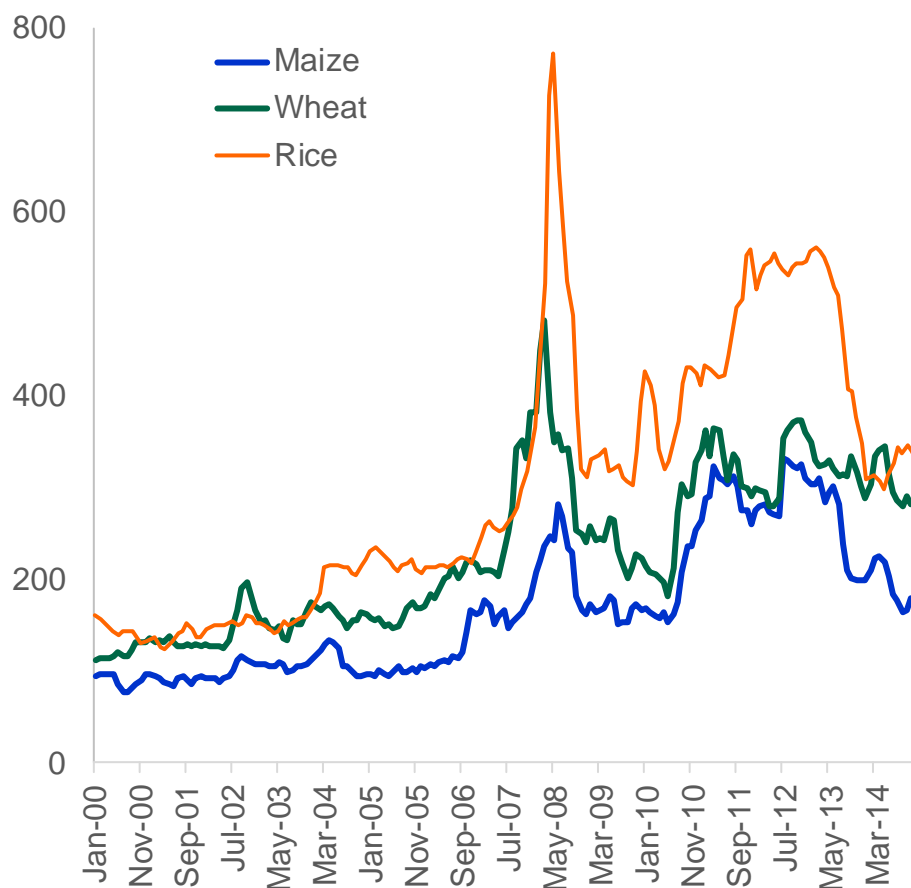
<sup>100</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG2 Zero hunger. (target 2.c)

**Global cereal prices (US\$/ton)**



**7. The case being, linkages with any other issue**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

## 8. Additional Supporting Information

### *Additional information*

The volatility of food prices can create uncertainty for all actors within the food systems and can have negative effects on the most vulnerable consumers, particularly those that already invest most of their income on food items.

### *Evidence*

### *Knowledge gaps*

Evidence of effective interventions that ensure food and nutrition security when facing with food price increasing.

### *References*

Andreyeva T, Long M W, Brownell K D. The impact of food prices on consumption: a systematic review of research on the price elasticity of demand for food[J]. American journal of public health, 2010, 100(2): 216-222.

Robles, M., and M. Torero. Understanding the Impact of High Food Prices in Latin America. *Economia* 10 (2): 117–64. 2010.

Cudjoe G., Breisinger C., Diao X., Local Impacts of a Global Crisis: Food Price Transmission and Poverty Impacts in Ghana, IFPRI Discussion Paper 00842, December 2008.

Darmon, N; Drewnowski A. Does social class predict diet quality? *Am J Clin Nutr* 2008; 87: 1107–1117.

Beydoun, MA; Wang Y. How do socio-economic status, perceived economic barriers and nutritional benefits affect quality of dietary intake among US adults? *Eur J Clin Nutr* 2008; 62: 303–313.

HLPE, 2011. Price volatility and food security. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome 2011. Available at [www.fao.org/cfs/cfs-hlpe](http://www.fao.org/cfs/cfs-hlpe).



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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Chinese Academy of Agricultural Sciences (CAAS)		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	China		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K38D Dietary patterns		
Description of the issue <i>in less than 5 lines</i>	To promote global dietary improvement by analysis and exchange of different types of national dietary pattern formation experience and characteristics.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	Reviewing literatures about dietary patterns and guides.		

Main response proposed to address the issue	Dietary Guidelines e.g. China, Japan, USA
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

Main actor(s) concerned or involved in the response proposed

National and local governments.  
Researchers, nutritionists.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	√		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue		√		√	
Nature of the main impact of the issue on FSN					Nutrition and health

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Dietary patterns is more a localized issued related with cultures, religions, and society. They will give direct impact on nutrition and healthy by influencing people's eating habit.

## 3. Attributes of the Issue

	Classification (**)			
1177. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1178. Breadth: Are there many people affected?	Few		Many	
1179. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1180. Impact on Availability	0			
1181. Impact on Access	0			
1182. Impact on Utilization/ nutrition	++			
1183. Impact on Stability	0			

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1184. Impact on most vulnerable people	+		
1185. Impact on women	++		
1186. Impact on children	++		
1187. Impact on marginalized populations	+		
1188. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Dietary guides provide detailed information on food and nutrients need of pregnant women, mother, and baby, which is quite important for the health of these groups of people.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		✓	
Moment to act to address the issue	✓		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Many countries have already released the dietary guide, but not promoted well to the public.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The recommended food consumption level is based on statistics of whole population, not on medical and human health sciences. More needed to be done to design a scientific guidelines.

#### 6. Linkages with SDGs (1 to 17)<sup>101</sup>

<sup>101</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG2: Zero Hunger

SDG12: Sustainable consumption and production patterns.



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## **7. The case being, linkages with any other issue**

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## **8. Additional Supporting Information**

### *Additional information*

Although these food consumption guidelines provide information about which foods are recommended in a given country context from a nutrition and health perspective, they do not necessarily lead to changes in dietary intakes. Consumers need more than information alone to make healthy food choices.

### *Evidence*

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### *Knowledge gaps*

Effective ways to drive consumers eat in a healthier way.  
Psychological and behavioral analysis of food consumption behavior.

### *References*

Honkanen P, Olsen S O, Verplanken B. Intention to consume seafood—the importance of habit[J]. *Appetite*, 2005, 45(2): 161-168.  
Steenkamp JBEM. Dynamics in consumer behavior with respect to agricultural and food products[M]//Agricultural marketing and consumer behavior in a changing world. Springer US, 1997: 143-188.  
Blacksmith T, Johnson R. Healthy Eating Habits: The Importance of Knowledge, Intent and Motivation[J]. 2012.

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Chinese Academy of Agricultural Sciences (CAAS)		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	China		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>K38E Reduce Food Waste and Increase Cyclic Utilization of Food Resource</i>		
Description of the issue <i>in less than 5 lines</i>	Roughly one-third of food produced for human consumption is lost or wasted globally, which amounts to about 1.3 billion tons per year. This inevitably also means that huge amounts of the resources used in food production are used in vain, and that the greenhouse gas emissions caused by production of food that gets lost or wasted are also emissions in vain.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	More and more papers about food waste published in this 5 years. By reviewing papers of FAO, OECD, and other researchers.		

Main response proposed to address the issue	Reducing food waste in the consumption stage for high-income countries; Focus more on reducing post-harvest loss in the processing and distributing stage for low and middle income countries.
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

National governments;  
Enterprises.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		√	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	√		√		
Nature of the main impact of the issue on FSN	√		√		Food availability and utilization

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Save foods means save money, resources, and reduce emission, and will increase food availability by saving more foods, and improve the quality of foods by improving processing and cooling technics.

## 3. Attributes of the Issue

	Classification (**)			
1189. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1190. Breadth: Are there many people affected?	Few		Many	
1191. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1192. Impact on Availability	++
1193. Impact on Access	+
1194. Impact on Utilization/ nutrition	++
1195. Impact on Stability	0

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1196. Impact on most vulnerable people	+		
1197. Impact on women	+		
1198. Impact on children	+		
1199. Impact on marginalized populations	+		
1200. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The cost of reducing food loss wastes is high, and cost-effect analysis needed to be conducted before design an intervention to reduce food loss (Rosegrant et al., 2015).

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		✓	
Moment to act to address the issue		✓	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>102</sup>

<sup>102</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG12: Ensure sustainable consumption and production patterns (Target 12.3)

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

Food waste evaluation method is needed to improved and applied to more countries.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

- Gustavsson J., et al. Global food losses and food waste – Extent, causes and prevention. FAO. 2011.
- Kader, A.A. 2005. Increasing food availability by reducing postharvest losses of fresh produce, Proc. 5th Int.Postharvest Symp. Acta Hortic. 682, ISHS 2005.
- Kummu M., et al. Lost food, wasted resources: Global food supply chain losses and their impacts on freshwater, cropland, and fertiliser use[J]. Science of the Total Environment, 2012, 438: 477-489.
- Liu J, Lundqvist J, Weinberg J, et al. Food losses and waste in China and their implication for water and land[J]. Environmental science & technology, 2013, 47(18): 10137-10144.
- Liu, G. 2014. Food losses and food waste in China: a first estimate. OECD Food, Agriculture and Fisheries Papers. No. 66. OECD Publishing (<http://dx.doi.org/10.1787/5jz5sq5173lq-en>).
- Parfitt, J., Barthel, M. & Macnaughton, S. 2010. Food waste within food supply chains: quantification and potential for change to 2050, Phil. Trans. R. Soc., vol. 365, pp. 3065-3081.
- Rosegrant M W, Magalhaes E, Valmonte-Santos R A, et al. Returns to Investment in Reducing Postharvest Food Losses and Increasing Agricultural Productivity Growth. Post-2015 Consensus. Copenhagen Consensus Center. 16 January, 2015.

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Jiantuo Yu, China Development Research Foundation		
Do you answer on behalf of your institution, or as an individual?		As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Agree		
Country of the responding individual/institution Please mention international or regional, the case being	China		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	K38F Quality of food		
Description of the issue <i>in less than 5 lines</i>	China's food security has been secured largely at the cost of overusing fertilizer and pesticide, which not only threaten the quality of food and the productivity of arable land, but also cause environmental degradation and risks at human health problems		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	(1) A quantitative methodology is necessary to identify impacts of agricultural inputs (fertilizer and pesticide) on grain yields and quality. (2) Using macro (regional level) and micro (household level) data, it is also important to examine impacts of food quality on human health based on econometric models (3) On the basis of the previously mentioned model, the research team could identify how China's food security in quantity has been offset by problem in food quality.		

Main response proposed to address the issue	(1) Strengthen food quality administration system based on the whole industrial chain; (2) Revise and increase the standard on food quality; (3) Increase transparency on food information; (4) Provide scientific instructions on agricultural production to rural farmers; (5) Increase investment to monitor health risks that are related to food quality
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

- (1) Government and related departments
- (2) Rural farmer
- (3) Food processing companies
- (4) Logistics industry
- (5) Consumer
- (6) NPOs

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	Lack of necessary public intervention		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue				√	
Nature of the main impact of the issue on FSN	√	√	√	√	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1201. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
1202. Breadth: Are there many people affected?				Many
1203. Scale: local/national/regional/global?	Local	National	Regional	Global
		China		

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1204. Impact on Availability	—
1205. Impact on Access	—
1206. Impact on Utilization/ nutrition	—
1207. Impact on Stability	—
1208. Impact on most vulnerable people	—

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

1209. Impact on women	–		
1210. Impact on children	--		
1211. Impact on marginalized populations	–		
1212. Cost to address the issue		Middle	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	√		
Moment to act to address the issue		√	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.			High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>103</sup>

<sup>103</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

- (1) Goal 2
- (2) Goal 6
- (3) Goal 3
- (4) Goal 15

**7. The case being, linkages with any other issue**

- (1) Health issue
- (2) Access to clean water and improved sanitation
- (3) Public administration

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



**HLPE Inquiry**  
**Critical and Emerging Issues for Food Security and Nutrition**  
**Questionnaire**

**(Please fill a separate form for each issue identified)**

About the respondent

Name, Surname and Institution	Chen Yangfen CAAS		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	No		
Country of the responding individual/institution Please mention international or regional, the case being	China		

1. Overview of the issue

Issue <i>in 2 lines</i>	K38G Diet change under rapid urbanization and rural transformation		
Description of the issue <i>in less than 5 lines</i>	More animal sourced foods are produced and consumed.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends ()
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Case survey and statistical analysis		

Main response proposed to address the issue	Comprehensive evaluation on the impact of dietary change on FSN; Good experience and practice about the agricultural structure adjustment.
Main actor(s) concerned or involved in the response proposed	governments, NGOs, CSOs, food producers' organizations, private sector organizations, philanthropic organizations, and other relevant stakeholders



Replies to the questionnaire are expected by 6 October 2016 by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

For the public inquiry fields below are optional

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?	✓	✓	Briefly mention how this may be the case

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	✓	✓	✓		
Nature of the main impact of the issue on FSN	✓	✓	✓		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1213. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1214. Breadth: Are there many people affected?	Few		Many	
1215. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1216. Impact on Availability	—			
1217. Impact on Access	—			
1218. Impact on Utilization/ nutrition	—			
1219. Impact on Stability	—			
1220. Impact on most vulnerable people	— —			
1221. Impact on women	0			
1222. Impact on children	0			
1223. Impact on marginalized populations	— —			
1224. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	✓		
Moment to act to address the issue	✓		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle✓	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>104</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
 Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture  
 Goal 12: Ensure sustainable consumption and production patterns  
 Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

<sup>104</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
 and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

7. The case being, linkages with any other issue

8. Additional Supporting Information

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Jieying Bi, Chinese Academy of Agricultural Sciences		
Do you answer on behalf of your institution, or as an individual?		As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?		Yes	
Country of the responding individual/institution Please mention international or regional, the case being	China		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	K38H Youth's escaping from rural and agriculture sector		
Description of the issue <i>in less than 5 lines</i>	The rural youth is moving away from agriculture, which is leading to ageing farming, slow pace of adoption of new innovations and technologies, huge losses in technology dissemination and delinking science with society. It is serious threaten to FSN.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<input checked="" type="checkbox"/> Challenge	<input type="checkbox"/> Opportunity	<input type="checkbox"/> It depends ()
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Population Census and Statistics shows the rural labor age structure in agricultural and the rising trend of migration of rural youth to urban and non-agricultural sector. Productivity analysis and comparison can be made among different age groups. Youth is more innovative, productive and receptive and curious to engage in and contribute to new technologies, which is a great asset for food production and value chain development.		

Main response proposed to address the issue	<p>The future agriculture will be market oriented which calls for agribusiness management capacity and entrepreneurship while there's limited social atmosphere and policy to guide, support and intrigue starting business.</p> <p>The current education and training can't enable the youth to meet the comprehensive and technical requirements for modern agriculture.</p> <p>The comparatively low income and historical misunderstanding of agriculture related career make the youth lack of interest in agricultural farming and research.</p> <p>Current land policy and lack of financial support makes difficult to operation modern large scale agriculture production.</p> <p>Indecent living conditions in rural area makes youth migrant into cities.</p>
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Main actor(s) concerned or involved in the response proposed	<p>The government should take the responsibility to formulate national foresight for modern agriculture and strategy while consultancy from International Agencies, NGOs, and local stakeholders, like researchers, farmers and cooperatives, youth and policy makers should be involved.</p> <p>Ministries should work together for an efficient support system. Multi ministries, including MOA, MOST, MOE, MOC should cooperate.</p> <p>All kinds of Medias to advocate modern agriculture are needed. Policies which encourage the development of modern agriculture and youth in participation agriculture, successful stories, kinds of awards of youth in ARD, and international foresights and experiences can be broadly publicized to establish the social atmosphere of encouraging agriculture.</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?	✓		Briefly mention how this may be the case

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	✓	✓	✓		
Nature of the main impact of the issue on FSN	✓	✓			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	<i>Classification (**)</i>	
1225. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	✓Critical point	Systemic issue

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1226. Breadth: Are there many people affected?	Few		√Many	
1227. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>China</i>	Regional <i>Asia</i>	Global
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1228. Impact on Availability	—			
1229. Impact on Access	—			
1230. Impact on Utilization/ nutrition	—			
1231. Impact on Stability	—			
1232. Impact on most vulnerable people	—			
1233. Impact on women	—			
1234. Impact on children	0			
1235. Impact on marginalized populations	— —Marginalized populations will be more and more concentrated and far fall behind because of lacking vibrant productivity			
1236. Cost to address the issue	Low	√Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			✓
Moment to act to address the issue	✓		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	√High
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>105</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
Goal 8, Goal 2, Goal 3

#### 7. The case being, linkages with any other issue

Sustainable agriculture development, especially community support agriculture with youth innovative participation

#### 8. Additional Supporting Information

##### *Additional information*

The challenges of retaining youth in agriculture have been recognized globally which also figured prominently in the Global Conference on Agriculture Research for Development 2012 (GCARD2012). The GCARD 2 have put forth "Youth (including young women) and Agriculture" as one of the focal discussions.

As first stepping stone to GCARD2012 decisions, a national initiative on young professionals in agriculture was taken in India to deliberate on "Foresight and Future Pathways of Agricultural Research through Youth in India" organized by IICA, APAARI, and TAAS in 2013.

Realizing new challenges and opportunities for youth in agriculture, the First Asia Pacific Regional Workshop on "Youth and Agriculture: Challenges and Opportunities" is organized by APAARI and Pakistan Agricultural Research Council (PARC) in 2013.

<sup>105</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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*Evidence*

There're amount of evidence showing the new trend of youth innovative participation in agriculture. Classical types include engaging in large-scale production and cooperatives in crops, specialized production and modern logistic in livestock sector, ecological agriculture and tourism, promotion of Community Support Agriculture (CSA), etc.

*Knowledge gaps*

The main gap lies in multidiscipline knowledge and entrepreneurship required for modern food security and nutrition system while the current education and training can't enable the youth to meet the requirements.

Another gap lies in youth missing role in policy debate and policy making.

*References*

APAARI, 2013. Foresight and Future Pathways of Agricultural Research Through Youth, Conference Proceeding.

APAARI, 2013. Regional Workshop on Youth and Agriculture: Challenges and Opportunities, Concept Note.

GFAR, 2012. Global Conference on Agriculture Research for Development 2012, GCARD 2012 Proceeding.





## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

**(Please fill a separate form for each issue identified)**

#### About the respondent

Name, Surname and Institution	Chen Yangfen CAAS		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	No		
Country of the responding individual/institution Please mention international or regional, the case being	China		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	Diet change under rapid urbanization and rural transformation		
Description of the issue <i>in less than 5 lines</i>	More animal sourced foods are produced and consumed.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends ()
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Case survey and statistical analysis		

Main response proposed to address the issue	Comprehensive evaluation on the impact of dietary change on FSN; Good experience and practice about the agricultural structure adjustment.
Main actor(s) concerned or involved in the response proposed	governments, NGOs, CSOs, food producers' organizations, private sector organizations, philanthropic organizations, and other relevant stakeholders

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

## Public Inputs



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Dr Sam L J Page, Associated Country Women of the World (ACWW)		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	UK sam.p@acww.org.uk		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P1A Iron and vitamin C deficiency in female subsistence farmers</i>		
Description of the issue <i>in less than 5 lines</i>	Rural women in Sub-Saharan Africa and South Asia are deficient in iron and vitamin C due to poverty, poor diet, lack of appropriate seeds; lack of dietary awareness, hookworm and malaria. This is causing chronic lethargy and high maternal morbidity.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	ACWW has sponsored more than 1,000 small-scale, Women-to-Women, rural development projects in Africa and Asia. Recent data collected from community-based projects in Punjab, Pakistan and Bungoma, Western Kenya indicates that many women are suffering from chronic fatigue and have slow healing wounds. These women rarely eat meat or fresh fruit. This indicates that their diets are deficient in iron and vitamin C.		

Main response proposed to address the issue	Although this is a critical issue that has been well documented, it is not yet being addressed for women who are subsistence farmers: iron complex and vitamin pills should be provided, free of charge, to all pregnant and lactating women in the rural areas of sub-Saharan Africa and South Asia. Food fortification is not an option for subsistence farmers. Therefore, seeds of pigeon pea and other iron-rich pulses should be made more widely available. Since each meal containing non-heme iron that is present in pulses should include 25mg of vitamin C, there is need to combine the consumption of pulses with
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	<p>vegetables or fruits that contain high levels of vitamin C. An average adult woman (19-50 years) requires 15mg of iron per day, this is equivalent to 100g of pigeon pea, which should be combined with either 100g tomatoes or 100g green leafy vegetables for maximum absorption.</p> <p>Information in the form of illustrated posters on nutrition (e.g. showing a healthy mother and child eating from a plate of pulses and green leafy vegetables) should be made available to school children, faith-based organisations and local NGOs. It could also be distributed with bed nets.</p> <p>Heme iron could also be made available through the provision of caste iron cook ware, or by using the 'Lucky Iron Fish' technology.</p> <p><a href="http://www.luckyironfish.com/shop">http://www.luckyironfish.com/shop</a></p>
Main actor(s) concerned or involved in the response proposed	<p>FAO, WHO, midwives, school teachers, faith-based organisations, seed merchants.</p> <p>ICRISAT's work on promoting iron-rich chickpea and pigeon pea varieties should be scaled up:</p> <p><a href="http://www.icrisat.org/the-pulse-of-the-drylands/">http://www.icrisat.org/the-pulse-of-the-drylands/</a></p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<b>External driver</b>	<b>Internal to food systems</b>	<b>Both</b>
Is the issue either or both?	Poverty, lack of information, lack of appropriate seed		

(*)	<b>Economic (and productive)</b>	<b>Social (and Cultural)</b>	<b>Environmental (resources, etc.)</b>	<b>Governance (institutions, rights, etc.)</b>	<b>Other (SPECIFY)</b>
Main nature of the issue		Educational			
Nature of the main impact of the issue on FSN		Poor health, including pre-eclampsia and maternal mortality			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	<b>Classification (**)</b>
1237. Depth: Is it relevant to food and	Systemic issue - these women are

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nutrition systems as a whole, or to specific parts of those systems?		outside the food and nutrition system	
1238. Breadth: Are there many people affected?		Many rural women	
1239. Scale: local/national/regional/global?		Regional	
		Mainly Africa and Asia; all areas where women are subsistence farmers	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)			
1240. Impact on Availability			
1241. Impact on Access			
1242. Impact on Utilization/ nutrition			
1243. Impact on Stability			
1244. Impact on most vulnerable people	Specify as appropriate		
1245. Impact on women	++		
1246. Impact on children	++		
1247. Impact on marginalized populations	Rural women who are subsistence farmers		
1248. Cost to address the issue	Low		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			
Moment to act to address the issue	Now		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### **6. Linkages with SDGs (1 to 17)<sup>106</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**SDG 2.2** By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons

**SDG 3.1** By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.

**3.2** By 2030, end preventable deaths of new-borns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births

**WHO target:** 50% reduction of anaemia in women of reproductive age.

#### **7. The case being, linkages with any other issue**

#### **8. Additional Supporting Information**

##### *Additional information*

Please see ACWW's Zero Hunger Challenge Projects 995 and 1009:  
<https://www.acww.org.uk/zero-hunger-challenge.html>

##### *Evidence*

Prevalence rates of anaemia in Africa, Asia, and Latin America range from 35% to 75%. Maternal deaths from anaemia range from 34 per 100,000 livebirths in Nigeria to as high as 194 per 100,000 livebirths in Pakistan (VanderJagt, et al, 2007)

According to the World Health Organization (2008) 1.62 billion people worldwide were affected by anaemia, a disease affecting the iron-binding capability of hemoglobin in red blood cells.

<sup>106</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

*References*

FAO (2001) Report of a joint FAO/WHO expert consultation, *“Human vitamin and mineral requirements, Chapter 13: Iron”*

<http://www.fao.org/docrep/004/y2809e/y2809e0j.htm>

VanderJagt D. J. et al (2007) *Nutritional Factors Associated with Anaemia in Pregnant Women in Northern Nigeria*

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3013266/>

World Health Assembly WHA Global Nutrition Targets 2025: *“Anaemia Policy Brief”*

[http://www.who.int/nutrition/topics/globaltargets\\_anaemia\\_policybrief.pdf?ua=1&ua=1](http://www.who.int/nutrition/topics/globaltargets_anaemia_policybrief.pdf?ua=1&ua=1)

World Health Organisation, 2008. *Worldwide prevalence of aneamia, 1993-2005*

[http://apps.who.int/iris/bitstream/10665/43894/1/9789241596657\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/43894/1/9789241596657_eng.pdf)



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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

#### Questionnaire

**(Please fill a separate form for each issue identified)**

#### About the respondent

Name, Surname and Institution	Jennifer Dias, Brooke		
Do you answer on behalf of your institution, or as an individual?	<input checked="" type="checkbox"/> On behalf	<input type="checkbox"/> As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Country of the responding individual/institution Please mention international or regional, the case being	International, headquartered in the UK		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P2A Community livelihood strategies for FSN undermined by surging unregulated donkey trade.</i>		
Description of the issue <i>in less than 5 lines</i>	The rapidly increasing demand for gelatin from donkey hides, known as ejiao, for use in traditional East Asian medicine is threatening a crucial food-facilitating livelihoods resource in Africa and beyond. This is a challenge for food security.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<input checked="" type="checkbox"/> Challenge	<input type="checkbox"/> Opportunity	<input type="checkbox"/> It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided <b>in section 8</b> below.</i>	This issue has been recognized as a key challenge by governments, particularly in West Africa and Asia, where a number of countries have introduced bans on the export of donkey hides in order to prevent the unsustainable depletion of this important economic resource. There has been extensive media coverage in Africa on this issue, which is now beginning to attract global media attention (see section 8). Our Policy Research (see section 8) shows the contributions of working livestock to livelihoods and food security, as well as the devastating impact of the loss of a working animal for families and communities. Our organizational presence in many of the affected countries has also provided us with insight into the impact of this trade on communities, as well as the operations of some slaughterhouses.		

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<p>Main response proposed to address the issue</p>	<p>Regulation of this trade is crucially important, enabling affected countries to ensure that donkeys are only slaughtered at a level which doesn't undermine the resource needs of communities depending upon these animals for their livelihoods and food security.</p> <p>Some countries have introduced bans on donkey exports as a response to this problem (such as India in 2014, Pakistan in 2015, and more recently multiple governments in West Africa, including Burkino Faso, Mali, Senegal and Niger), which brings obvious benefits for the protection of this resource in the affected country, as well as for animal welfare. However, there are concerns about the unintended consequences of such measures. These can include black market trade, as well as moving the problem elsewhere and outside of the jurisdiction of the bans. When this happens, resource depletion and animal welfare problems are not resolved, and additional problems can arise (for example the transport of live animals to different countries).</p> <p>By developing appropriate regulation, national governments can ensure the trade, transport and slaughter of donkeys are governed by appropriate standards (including relevant OIE standards for animal health and welfare). In this way, governments can safeguard a livelihoods resource on which millions of people depend on for their survival, as well as mitigating other associated problems (e.g. environmental impacts). Brooke is committed to offering its expertise and technical assistance to assist governments in developing necessary regulatory tools.</p> <p>In addition to regulating the trade at the supply end, it is also important to address the rapidly increasing and unsustainable demand for donkey gelatin. While East Asian economies advance and shift away from traditional agricultural practices and national donkey populations decline (by as much as 50% in China), demand for this luxury product is surging – requiring constantly increasing levels of importation. Global agencies such as the UN food agencies have an important role to play in disseminating knowledge and best practice in order to find solutions.</p>
<p>Main actor(s) concerned or involved in the response proposed</p>	<p>National Governments of importing and exporting countries.</p> <p>The Private Sector organisations involved in the donkey trade and commercial livestock production.</p> <p>Relevant global organisations including UN Food Agencies, OIE and WTO.</p>

Replies to the questionnaire are expected by 6 October 2016 by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	✓		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue		✓	✓	✓	
Nature of the main impact of the issue on FSN	✓		✓		Animal Welfare impact of unregulated transport and slaughter

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

This issue, driven by an external social/cultural demand for a product which is seen as luxurious and desirable in East Asian Traditional Medicine, has the potential to decimate populations of donkeys and driving up prices of donkeys (reportedly from \$34 to \$147 in Niger) as well as other livestock.

## 3. Attributes of the Issue

	Classification (**)			
1249. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			✓Systemic issue
1250. Breadth: Are there many people affected?	Few			✓Many
1251. Scale: local/national/regional/global?	Local	National	Regional	✓Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1252. Impact on Availability	— —
1253. Impact on Access	— —
1254. Impact on Utilization/ nutrition	—
1255. Impact on Stability	— —
1256. Impact on most vulnerable people	Women from poor communities are particularly affected due to their dependence on working animals to perform household chores (such as collecting water or firewood), without which they would not have the time/capacity to generate income or feed their families.

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1257. Impact on women	—
1258. Impact on children	—
1259. Impact on marginalized populations	Specify as appropriate
1260. Cost to address the issue	<div>✓Low</div> <div>Middle</div> <div>High</div>

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in [section 8 below](#).

**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

Donkeys provide a key food-facilitating resource for their owners and users; for example, donkeys are used to plough fields, transport the feed, water and health care needs for other livestock and transport food produce to markets. Unregulated trade risks depleting a crucial food security resource.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	✓		
Moment to act to address the issue	✓		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in [section 8 below](#).

**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

This situation is quickly escalating and will rapidly reach unsustainable levels. For example, government officials in Niger recently reported that exports had increased from 27,000 animals in 2015 to 80,000 from Jan-Sept 2016, prompting fears the country's population of donkeys would soon be decimated if sales were allowed to continue (CNN, Sept 2016).

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	✓Middle	High
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**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

Evidence is emerging from an increasing number of countries across Africa and beyond and has been documented in a wide range of media sources, as listed in section 8. Section 8 also lists research and other resources demonstrating the contribution of donkeys to livelihoods and food security.

#### 6. Linkages with SDGs (1 to 17)<sup>107</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture**

<sup>107</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Working livestock, particularly donkeys, play a fundamental role in agricultural and animal-sourced food production. They provide draught powered soil tillage and manure for fertilizer. Crucially, they transport feed and water for other livestock, such as cows, buffalos, chickens, sheep and goats, as well as food, water and firewood for households themselves. They are also used to transport sick livestock to animal health posts, helping to increase resilience of small-scale livestock production to disease. They then transport agricultural and livestock produce to markets and milk cooperatives, providing a crucial linkage in the “first mile” of the value chain between the point of production and all-weather roads that can be easily accessed by other vehicles. Combined with the food-purchasing power provided by the income they generate as a form of public transportation and through the sale of goods at market, working livestock therefore make a substantial contribution to meeting Sustainable Development Goal 2. The importance of draught power to FSN was recognized through its inclusion in the recent HLPE report on the role of livestock in sustainable agricultural development and the subsequent CFS policy recommendations.

When communities are deprived of this valuable resource, other livestock are not as well-fed, lack of manure and soil tillage impacts on harvests, and food production output and income falls. As families are forced to pay for transport that was otherwise free, families are furthermore forced to switch to less nutritious foods and collect water, wood and animal feed/forage by foot (which may also mean leaving young children unattended).

Any depletion of this resource, without provisions for alternative sources of draught power, therefore has a significant detrimental impact on FSN.

#### **SDG 1: End poverty in all its forms everywhere**

Donkeys provide direct income to support people’s livelihoods across a wide range of sectors including agriculture, construction and brick kilns, tourism, mining, and public transport. In addition to their vital contribution to the household incomes of their owners and users, they also generate significant economic savings in the transportation of people or goods. In this way, they represent an important asset of the poor and help to keep those that benefit from their labour out of poverty. Working livestock also represent an important social protection mechanism, boosting community resilience in the face of disasters and climate shocks, by for example enabling communities to collect water or food from greater distances or helping families to relocate when needed or to rebuild homes or infrastructure. The stability of this resource is therefore crucial in preventing communities from falling into poverty and maintaining community resilience.

#### **SDG 6: Ensure availability and sustainable management of water and sanitation for all**

Donkeys are key to maintaining sustainable access to water. Many rural communities in developing countries depend on their donkeys to help them reach wells, streams and other water sources that would otherwise be out of reach or which are cleaner than other nearby water sources. Donkeys are able to carry significantly larger quantities of water than people can alone, and also significantly reduce the number of hours involved in water collection. Decimation of this resource would therefore seriously undermine access to water for those who depend on it, with knock-on effects for agricultural and livestock production.

### **7. The case being, linkages with any other issue**

#### **Food Safety**

There is concern that due to lack of regulation, donkey meat may unknowingly end up in the human food chain, particularly in cases where only the donkey gelatin is required – there are sources that claim that this has already occurred in Kenya, often disguised as beef. In some cases, there is also evidence that the meat is being exported to Asia for human consumption (see KTN news video in Section 8). This is particularly a concern, as donkeys that have been used as working animals may have been treated with medicines that can be harmful to humans if the meat is then consumed. Medicines used in livestock bred for human consumption are normally strictly controlled.

#### **Conflict and theft**

Replies to the questionnaire are expected by 6 October 2016 by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

The trade has also sparked conflict in a number of locations, including Burkino Faso and Ethiopia where donkey slaughterhouses have been attacked and closed by local communities protesting against the trade due to the environmental impact on water supplies, cultural beliefs on the slaughter of donkeys and worker-employer disputes. Our partners in Kenya also report that donkey theft has also become common place in many communities, as donkeys are generally not bred for commercial slaughter as yet and slaughterhouses instead pay owners for animals brought for slaughter. Alternatively, donkeys are killed by thieves in situ with machetes or stones, in order for the carcasses to be sold. For example, Brooke East Africa received 20 reports of donkey theft in Baringo county in Kenya through a partner organization and anecdotal evidence suggests that other cases have gone unreported or have been reported directly to the police. In Tanzania, a local NGO funded by Brooke East Africa reported the theft of more than 50 donkeys from one village overnight, the carcasses of which were later found skinned in the bush. Large scale donkey theft of this kind was also reported in Pakistan before the export ban, as can be seen in the references below. The NSPCA report such theft in South Africa, while also referencing “brutal” slaughter practices and have recently secured the successful prosecution of 8 people for the illegal trafficking of donkeys. (We have also recently received anecdotal evidence of a large reduction in the donkey population of Samangan province of Afghanistan due to the trade.)

## 8. Additional Supporting Information

### *Additional information*

KTN News (Sept 2016) *Donkey Dollars (see 2:43 onwards)* – video discussing the donkey trade in Kenya, showing the ways in which communities use donkeys to support their livelihoods, a donkey slaughter house and community reaction to the trade. Available at:  
[http://www.standardmedia.co.ke/ktnnews/index.php?videoID=2000113219&video\\_title=donkey-dollars-by-sharon-momanyi](http://www.standardmedia.co.ke/ktnnews/index.php?videoID=2000113219&video_title=donkey-dollars-by-sharon-momanyi)

### *Evidence*

#### **FAO - Brooke Experts Meeting Report**

“The Role, Impact and Welfare of Working (Traction and Transport) Animals” details the findings of the 2011 expert meeting hosted by the Food and Agriculture Organisation of the United Nations and Brooke on the roles of working livestock in human development.  
 Report available at: [fao.org/3/a-i3381e.pdf](http://fao.org/3/a-i3381e.pdf)

#### **Invisible Workers International Report**

Through compelling quantitative and qualitative evidence, including Household Economy Approach (HEA) baselines carried out by Brooke with the Food Economy Group (FEG) in India, Pakistan and Kenya, this report shows the critical and multiple economic contributions that working equine animals make to people’s livelihoods.  
 English, French and Spanish reports available at: [thebrooke.org/invisible-workers](http://thebrooke.org/invisible-workers)

#### **Voices from Women Research Project**

This research project was initiated in 2013 to give women who live and work with draught animals a voice and a platform to express their personal experiences and opinions. Based on research carried out in Ethiopia, Kenya, India and Pakistan, the Invisible Helpers report shows the extent to which women rely on working livestock to fulfil household and community roles.  
 English and French reports available at: [thebrooke.org/voices-from-women](http://thebrooke.org/voices-from-women)

#### **Invisible Livestock Policy Brief**

This policy brief summarises the key findings and recommendations from the policy research listed above, demonstrating the contribution of working animals to food security. Available at:  
<https://www.thebrooke.org/sites/default/files/Advocacy-and-policy/Invisible%20Livestock.pdf>



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

#### *Knowledge gaps*

- Accurate statistical data on the extent of the trade.
- Documented records of transport and slaughter practices. (Brooke is currently working with a partner organisation in Kenya to conduct a piece of research on these issues and would be willing to share findings with the HLPE once finalised, although this will not replace formal government/industry records of the trade.)
- Inclusion of working equids in livestock databases and censuses, as well as livelihoods baselines.

#### *References*

The News on Sunday (Feb 2015). *'Hide' your donkey*. Available at: <http://tns.thenews.com.pk/hide-your-donkey/#.WEGslqNFAdV>

Dawn (Oct 2015). *Donkey hides cleared by Punjab govt for export confiscated*. Available at: <http://www.dawn.com/news/1213561>

Horsetalk (Oct 2015). *Pakistan moves to rein in donkey slaughter trade*. Available at: <http://www.horsetalk.co.nz/2015/10/18/pakistan-donkey-slaughter-trade/#ixzz4M67oOe2p>

Burkina 24 (Aug 2016). *Le Burkina adopte un décret interdisant l'exportation des ânes et de leurs produits*. Available at: <http://www.burkina24.com/2016/08/03/le-burkina-adopte-un-decret-interdisant-l'exportation-des-anes-et-de-leurs-produits/>

The Independent (Sept 2016). *China's quest to buy up global supply of donkeys halted by African nations*. Available at: <http://www.independent.co.uk/news/world/asia/china-donkeys-buying-kill-africa-ejiao-medicine-hide-burkina-faso-niger-donkey-shortage-a7339181.html>

CNN (Sept 2016). *Why is China buying up the global supply of donkeys?* Available at: <http://edition.cnn.com/2016/09/29/africa/china-african-donkeys/index.html>

Guardian (Sept 2016) *China's demand for African donkeys prompts export bans* Available at: <https://www.theguardian.com/world/2016/sep/13/africas-donkey-population-decimated-by-chinese-demand>

Daily Maverick (Oct 2016). *The Great African Donkey Rush*. Available at: [http://www.dailymaverick.co.za/article/2016-09-09-the-great-african-donkey-rush/#.V\\_ZMKKNwbIW](http://www.dailymaverick.co.za/article/2016-09-09-the-great-african-donkey-rush/#.V_ZMKKNwbIW)

Daily Mail (Nov 2016). *Decimation of the donkeys: How 4MILLION animals are slaughtered every year to make Chinese 'miracle' youth serum*. Available at: <http://www.dailymail.co.uk/news/article-3930644/Decimation-donkeys-4MILLION-animals-slaughtered-year-make-Chinese-miracle-youth-serum.html>

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

#### Questionnaire

**(Please fill a separate form for each issue identified)**

#### About the respondent

Name, Surname and Institution	Richard Wilk Indiana University	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being	USA	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P3A Food Transparency: Lack of public information makes intelligent policy decisions impossible</i>		
Description of the issue <i>in less than 5 lines</i>	Nobody knows how much CO2 emission, how many pollutants, and how much water went into any particular package of food. We only have vague averages for a few gross categories. How is tracking done? How can we encourage more?		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends both
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Focus on specific brands of common processed food, and separate direct from indirect environmental costs. We have successful examples for generic products (eg. canned vs home cooked beans) from Scandinavian countries, and comparisons of different production technologies (irrigated vs dry-land rice). We need much more specific information on specific brands, on complex processed foods, before we can even begin to inform consumers or move towards effective policy.		
Main response proposed to address the issue	<ol style="list-style-type: none"> <li>1. Seek partners in the processed food sector.</li> <li>2. Assemble advisory panel to choose specific groups of global brands and products for audit.</li> <li>3. Contract with multidisciplinary research teams to develop measures and algorithms for use in the research.</li> <li>4. Assess result and run (or contract) pilot comparisons to estimate costs .</li> <li>5. Public demonstration of tools and results, and develop benchmarks and best practices</li> </ol>		



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Main actor(s) concerned or involved in the response proposed

International advisory panel from academia and industry.  
Contracts with existing institutions and teams to develop measures and sources of information needed for audits in different food sectors.  
Committee or team to select targets for audit.  
Second round of contracts for research.  
Marketing teams assembled from industry and business schools in target regions.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Audit of food systems to identify key external drivers

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					All, and linkages between
Nature of the main impact of the issue on FSN					Transparency and informed policy

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

With growth of international food industry and long, complex commodity chains, comparing the human and environmental costs of individual food products can no longer be done by a single nation or by specialists in particular disciplines. The clothing industry shows provides a good model of the possibilities and obstacles. The participation of major industry leaders is essential.

## 3. Attributes of the Issue

	Classification (**)			
1261. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1262. Breadth: Are there many people affected?	Few		Many	
1263. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1264. Impact on Availability	o			
1265. Impact on Access	++			
1266. Impact on Utilization/ nutrition	o			
1267. Impact on Stability	+			

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1268. Impact on most vulnerable people	Unknown – a major goal of the project		
1269. Impact on women	Same		
1270. Impact on children	Same		
1271. Impact on marginalized populations	Same		
1272. Cost to address the issue	Low	<b>Middle</b>	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in **section 8 below**.

We simply do not have the information we need to assess these impacts accurately for actual food products, rather than gross categories like “beef” or “cereals.” Informed policy and consumer choice require accurate and transparent measures. Addresses the declining public trust in food safety.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	unknown		
Moment to act to address the issue	yesterday		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in **section 8 below**.

The impacts only begin when the research is done.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	<b>Low</b>	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. **Linkages with SDGs (1 to 17)**<sup>108</sup>

<sup>108</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Responsible Consumption is where I start. As we trace impacts back from the site of food consumption, we connect with Industry, Innovation and Infrastructure, and ultimately to Climate Action, plus Life Below Water and Life on Land.

#### **7. The case being, linkages with any other issue**

#### **8. Additional Supporting Information**

Lilienfeld, Robert and William Rathje (1998), Use Less Stuff: Environmental Solutions For Who We Really Are. New York: Ballantine.

Sranacharoenpong, Kittti, Samuel Soret, Helen Harwatt, Michelle Wien, and Joan Sabaté 2015 The Environmental Cost of Protein Food Choices. Public Health Nutrition 18(11): 2067–2073.

Schmidt Rivera, Ximena C., Namy Espinoza Orias, and Adisa Azapagic 2014 Life Cycle Environmental Impacts of Convenience Food: Comparison of Ready and Home-Made Meals. Journal of Cleaner Production 73.

##### *Industry-funded auditing example:*

Life Cycle Assessment of Chili with Beans Comparing Packaging -  
iere.org/wp-content/uploads/lca-chili-and-food-service-packaging-lca.pdf

Life Cycle Information - Green Bean Canning Process | SMDI - Steel Market Development Institute  
N.d. <http://www.smdisteel.org/sustainability/life-cycle-information/containers/green-bean-canning-process.aspx>

Kraft\_Foods\_Lifecycle\_Assessment\_Success\_Stories\_-\_May\_2012.pdf

##### *Knowledge gaps*

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

Replies to the questionnaire are expected by 6 October 2016 by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

#### Questionnaire

**(Please fill a separate form for each issue identified)**

#### About the respondent

Name, Surname and Institution	HELVETAS Swiss Intercooperation	
Do you answer on behalf of your institution, or as an individual?	X On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	X Yes	No
Country of the responding individual/institution Please mention international or regional, the case being	Switzerland / International	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P4A Long-term effects of agrochemicals on human health and ecosystems</i>		
Description of the issue <i>in less than 5 lines</i>	Widespread exposure to multiple agrochemicals affects the health of farm workers and consumers as well as ecosystems and natural resources, with enormous costs to society. Joint efforts are needed to reduce their use and associated risks.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	X Challenge	X Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Agrochemicals <sup>109</sup> are currently high on the agenda of governments (e.g. <u>National Action Plans</u> ), civil society organizations (e.g. <u>PAN</u> ) and multi-stakeholder initiatives (e.g. <u>IPM Coalition</u> , <u>IDH</u> ). They are a major concern for consumers across the globe, reflected by intensive media coverage. There is a broad consensus for the need to reduce pesticide use and risks.		
Main response proposed to address the issue	Re-designing farming systems to reduce their reliance on agrochemicals (diversification, resistant varieties/breeds); promoting alternative pest management (e.g. biocontrol) and IPM; developing conducive policies; engage businesses and retailers; sensitize consumers.		

<sup>109</sup> Synthetic pesticides, fertilizers and veterinary inputs

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Main actor(s) concerned or involved in the response proposed

Reducing the use and risks of agrochemicals is a joint responsibility of farmers, businesses, retailers, scientists, policy makers and civil society organizations.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		X	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	XX	XX	X	
Nature of the main impact of the issue on FSN	Production factor, cost driver, risk	Health of workers and consumers	Biodiversity, water, soil fertility	Regulations, policies, subsidies	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

Agrochemicals are used to increase production, but they are also a cost driver and can undermine the production base (natural resources and health of rural communities). Use levels are not economically efficient since subsidies deter markets and external costs are not priced in.

## 3. Attributes of the Issue

	Classification (**)			
1273. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		X Systemic issue	
1274. Breadth: Are there many people affected?	Few		X Many	
1275. Scale: local/national/regional/global?	Local	National	Regional	X Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1276. Impact on Availability	+
1277. Impact on Access	-
1278. Impact on Utilization/ nutrition	--
1279. Impact on Stability	--
1280. Impact on most vulnerable people	-- (smallholders and agricultural workers)

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1281. Impact on women	-- (particularly during pregnancy)		
1282. Impact on children	-- (affecting embryo and infant development)		
1283. Impact on marginalized populations	-- (smallholders and agricultural workers)		
1284. Cost to address the issue	X Low	X Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in **section 8 below**.

Costs to address the issue are low compared to the costs caused by the issue. Clever system design and alternatives would ensure productivity.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	XX	XXX
Moment to act to address the issue	XX	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in **section 8 below**.

There are immediate as well as long-term effects associated to the issue. Currently the topic is gaining momentum, so the best time to act is in the coming 5 years. Due to the big interest of consumers the issue can be used as a driver for overall transformation towards sustainable food systems.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	X Middle	High
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There is ample evidence on the immediate impacts on health and ecosystems, but a need for more research on long-term and synergistic impacts. There is also a lot of knowledge available on alternatives, but practical application needs to be further enhanced.

#### 6. **Linkages with SDGs (1 to 17)**<sup>110</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Goal 2, target 2.4

Goal 3, target 3.9

Goal 6, target 6.3

Goal 12, target 12.4

#### 7. The case being, linkages with any other issue

<sup>110</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**Strong links with**

- sustainable agriculture systems
- consumer awareness
- sustainable consumption and production
- true cost / internalizing externalities
- policy coherence

**8. Additional Supporting Information**

*Additional information*

Reducing pesticide use and risks - What action is needed?

[http://assets.helvetas.org/downloads/briefing\\_paper\\_pesticide\\_reduction\\_including\\_conclusions.pdf](http://assets.helvetas.org/downloads/briefing_paper_pesticide_reduction_including_conclusions.pdf)

*Evidence*

(mentioned in the paper above)

*Knowledge gaps*

(mentioned in the paper above)

*References*

(mentioned in the paper above)





## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	John Webster, University of Bristol, Emeritus		
Do you answer on behalf of your institution, or as an individual?		As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	United Kingdom		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P5A Pastoral livestock systems, animal welfare and environmental health</i>		
Description of the issue <i>in less than 5 lines</i>	Grasslands are becoming degraded in both subsistence and commercial systems because these ecosystems cannot be sustained from the sale of food alone. New methods and enabling policies are needed to sustain the welfare of the farmers, livestock and the health of these environments.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	Challenge	Opportunity	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<p>Full life-cycle analysis based on C, N and water that explores the potential of pastoral and silvo-pastoral systems to sequester C and improve water management. (Refs 2,5)</p> <p>New approaches, e.g. “emergy” analysis, that examine production efficiency in terms of renewable, non-renewable and purchased resources (Refs 3,4)</p> <p>Evaluation of the environmental, social and economic costs, benefits and needs of pastoral and silvo-pastoral systems (Refs 1,6,7)</p>		
Main response proposed to address the issue	<p>Development of robust methods for surveillance of human and animal welfare and environmental sustainability in pastoral systems.</p> <p>Enabling policies to achieve optimal rewards (or penalties) for pastoral farmers in proportion to their contributions to food security, animal welfare and environmental health.</p>		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

Main actor(s) concerned or involved in the response proposed

Agricultural, environmental and veterinary scientists are needed to establish robust procedures for the measurement, recording and surveillance of the impact of livestock systems on environmental health, human and animal health and wellbeing.

Legislators and advisors (e.g. FAO, OIE, NGOs) competent to devise strategies that properly reward (or penalize) livestock farmers for positive (or negative) contributions to the public good through sustainable land management.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X		

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue			X	X	
Nature of the main impact of the issue on FSN			X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

A main cause of environmental degradation in grazing systems is the near impossibility of sustaining the health for the land from the sale of food alone. Landowners that make a positive contribution to the public good through improved environmental health need to be rewarded from the public purse.

## 3. Attributes of the Issue

	Classification (**)			
1285. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				X
1286. Breadth: Are there many people affected?				Many
1287. Scale: local/national/regional/global?				Global

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1288. Impact on Availability	0
1289. Impact on Access	+
1290. Impact on Utilization/ nutrition	+

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

1291. Impact on Stability	++		
1292. Impact on most vulnerable people	++ Pastoral farmers at subsistence level		
1293. Impact on women	Improved incomes for family support		
1294. Impact on children	Improved protein nutrition		
1295. Impact on marginalized populations	Pastoral farmers		
1296. Cost to address the issue		X	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The social and environmental costs of poverty and land degradation resulting from the exploitation of grasslands simply to provide income from the sale of food from animals are unsustainable. Conservation of these lands through improved husbandry is a public good and should be sustained from the public purse.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

The need to address issues of environmental sustainability in livestock systems is immediate. Improved, satisfactory metrics should be achievable within 5 years. The impact of more effective enabling policies will be long term.

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The principles of life-cycle analysis are well understood but the extent of uncertainty attached to most published estimates remains high

Analysis of livestock systems in terms of renewable and unrenovable resources (e.g. emergy) is in its infancy

#### 6. Linkages with SDGs (1 to 17)<sup>111</sup>

<sup>111</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 15: Life on Land: sustainable use of terrestrial ecosystems in terms of environmental health and quality of life for people and sentient animals in pastoral systems

Link to SDG 13. Climate action. Quantification and exploitation of the capacity of pastoral and silvo-pastoral systems to sequester and mitigate the impact of greenhouse gas production.

## 7. The case being, linkages with any other issue

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## 8. Additional Supporting Information

### *Additional information*

### *Evidence*

Known extent of land degradation and GHG production within existing, unimproved livestock systems.

Capacity of ruminants to produce food for human consumption from complementary (e.g. grasses, by-products), rather than competitive feeds (e.g. cereals) (Refs 4,5).

Contribution of locally renewable resources to beef production: Grazing systems = 85%, corn-based = <30% (Ref 4)

### *Knowledge gaps*

Three fold variation in estimates of ecological balance (Biocapacity-footprint) within similar livestock production systems (Ref 3)

Uncertainties concerning long-term patterns of C sequestration/release in pastoral and silvopastoral systems. (Ref 6)

### *References*

1. Bernues A et al. 2005 An integrated approach to study the role of grazing livestock in the conservation of rangelands in a protected national park. *Livestock Production Systems* 96, 75-85.
2. Nair PKR, Nair VD, Kumar BM, Showalter JM 2010 Carbon sequestration in agroforestry systems *Advances in Agronomy* 108, 287-307
3. Pereira L, Ortega E 2012. A modified footprint method: the case study of Brazil. *Ecological indicators* 16, 113-127.
4. Rotolo GC, Rydberg T, Lieblein G, Francis C 2007. Emergy evaluation of grazing cattle in Argentina's pampas. *Agriculture, Ecosystems and Environment*. 119, 383-395
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6. Sousanna JF, Lemaire G 2014 Coupling C and N cycles for environmentally sustainable intensification of grasslands and crop-livestock systems. *Agriculture, Ecosystems and Environment*. 190, 9-17
7. Webster John 2013. *Animal Husbandry Regained. The place of farm animals in sustainable agriculture*. Earthscan from Routledge UK 243pp.
8. Webster John 2016 *Livestock production systems: animal welfare and environmental quality* Ch 9, (p137-152) in Routledge Handbook of Food and Nutrition Security. Eds B Pritchard, R Ortiz and M Shekar, Routledge, UK.



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Paul Rigterink, PhD		
Do you answer on behalf of your institution, or as an individual?		As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	USA		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P6A Vocational training material for poor people raising pigs in the low land tropics</i>		
Description of the issue <i>in less than 5 lines</i>	The vocational training material for poor people raising pigs in the low land tropics is inadequate. More You tube videos and train the trainer materials are needed		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>		Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	A survey of the amount of vocational training material (You tube videos and written brochures) in a variety of languages will show that the amount of material and quality of material is inadequate. Also the amount of train the trainer material needed by field workers such as Peace Corps volunteers is inadequate		
Main response proposed to address the issue	The personnel who can provide vocational training material for poor people raising pigs in the low land tropics. More You tube videos and train the trainer materials are needed		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed	FAO and university personnel working in international development
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*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		Poor people do not have the information to raise pigs optimally	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	Poor people want to raise pigs to increase their income and improve food security but they do not have the proper information or supplies				
Nature of the main impact of the issue on FSN					FSN needs to identify experts who can solve this problem

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1297. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			
1298. Breadth: Are there many people affected?			Many	
1299. Scale: local/national/regional/global?			Regional	

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	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)			
1300. Impact on Availability	-		
1301. Impact on Access	-		
1302. Impact on Utilization/ nutrition	-		
1303. Impact on Stability	-		
1304. Impact on most vulnerable people	-Impact on poor and extremely poor people		
1305. Impact on women	-		
1306. Impact on children	-		
1307. Impact on marginalized populations	Impact on poor and extremely poor people		
1308. Cost to address the issue	Low		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	x		
Moment to act to address the issue	x		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low		
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with SDGs (1 to 17)<sup>112</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

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<sup>112</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Beat RÖÖSLI ; Swiss Farmers' Union (SFU)	
Do you answer on behalf of your institution, or as an individual?	On behalf of SFU	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	Switzerland	

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P7A Farmers' Voice and Needs towards SDGs and Food Security</i>		
Description of the issue <i>in less than 5 lines</i>	<ul style="list-style-type: none"> <li>- More than 50% of world population depends on Agriculture (income, labor, etc.)</li> <li>- The hungry are mainly farmers</li> <li>- Farmers worldwide have low income and hard work, even though agri-food business is huge.</li> <li>- There is a lack of young farmers for our future food security.</li> <li>- Trade policy regimes are not respecting the social and environmental dimension of sustainability and therefore farmers and natural resources do suffer worldwide in favor of a small number of profiteers.</li> <li>- But their voice is low compared to experts, NGOs, lobbyists, agribusiness, ...</li> <li>- How could their needs better be evaluated and integrated in politics and policy so that the SDGs really will be in favor of them</li> </ul>		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>		Opportunity	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<ul style="list-style-type: none"> <li>- Selecting a couple of countries from every continent.</li> <li>- Comparative, qualitative analysis of Case Studies, including recommendations for UN and other IGOs.</li> <li>- Case Studies including ...</li> <li>- A) Research of: documents, market regulation, empiric market regimes, food chain mechanisms, allocation of capital and decision power.</li> <li>- B) Interviews with Farmers, if feasible</li> </ul>		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	<p>chosen by a representative selection.</p> <ul style="list-style-type: none"> <li>- C) recommendations for national level.</li> </ul>
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Main response proposed to address the issue	
Main actor(s) concerned or involved in the response proposed	<p>Family Farmers from around the world (not only Smallholders in developing countries)</p> <p>Especially young farmers, who must feed their communities, countries, and the world in the future.</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			Briefly mention how this may be the case

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	<i>Classification (**)</i>	
1309. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point	Systemic issue
1310. Breadth: Are there many people affected?	Few	Many

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1311. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1312. Impact on Availability	++			
1313. Impact on Access	+			
1314. Impact on Utilization/ nutrition	++			
1315. Impact on Stability	++			
1316. Impact on most vulnerable people	++ family farmers			
1317. Impact on women	+ (many family farms are runned by women)			
1318. Impact on children	++ (part and future leaders of family farms)			
1319. Impact on marginalized populations	In many countries, family farmers are marginalized			
1320. Cost to address the issue		Middle		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			Long run
Moment to act to address the issue	Immediately, better yesterday, and continuously		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**6. Linkages with SDGs (1 to 17)<sup>113</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Family farmers are at the center of the SDGs goals and challenges.  
They will be the key to reach SDG 2 (most important) and 1 (second) and many other SDGs.  
Food is not substitutional and the world population and its food consumption will further grow.  
Food production uses natural resources. If we want to move from actual overuse to more sustainable production (including the income of farmers), it will not be possible without broad inclusion of family farmers worldwide.

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<sup>113</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**7. The case being, linkages with any other issue**

Climate Change (adaptation of production systems and breads; mitigation by binding CO<sub>2</sub> into the soil)  
Agribiodiversity (free seeds under cooperative control; public research...)  
Rural development reducing urban poverty.  
Land rights, property rights, market regulation  
Trade policies in favor of SDGs and sustainable food security for all.

**8. Additional Supporting Information***Additional information**Evidence**Knowledge gaps**References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Manuel MOYA, University Miguel Hernández		
Do you answer on behalf of your institution, or as an individual?		Individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Spain		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P8A Lysine genetically enriched sorghum (and corn) grains</i>		
Description of the issue <i>in less than 5 lines</i>	These crops would improve undernutrition of children in South-Saharan Africa South-Central Asia.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>		Opportunity	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Regional crops stand partly because of their adaptation to climate, sorghum plants- dry lands. Sorghum grains contain~10 g of protein/100 g, but of low quality due to its low content of Lys (20 mg/g of protein). This would be a 'complete protein' if it were of 51 mg/ g of protein (1). Also the case of corn, but not adapted to arid lands. In 1964 (2) the genetic variant o2 opened the way up to o7, AtMAP18 gene (3) with increases of 20-30% of Lys vs untransformed plants. Also higher non-zein protein content.		

Main response proposed to address the issue	Undernutrition in under 5s is receding around the world but in two mentioned regions it is of 80 million of children, to which should be added LIC conditions. It has not been easy to introduce the consumption of 250 ml/ day of goat's milk (resilient to dry climate) or soybean products to the population. Therefore the main issue is to improve essential amino acids (and protein) in the basic food stuff for those children.
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

A cooperative government from an African country  
Companies: Pioneer-Dupont, Arcadia Biosciences, Bayer-Monsanto. In general the cost of transforming sorghum is high for some private companies.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	YES		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue		YES			
Nature of the main impact of the issue on FSN				YES	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum

In the initial phase this should be a pilot study carried out in a precise country.

## 3. Attributes of the Issue

	Classification (**)			
1321. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
1322. Breadth: Are there many people affected?				Many
1323. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Country Sudan ?	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1324. Impact on Availability	+			
1325. Impact on Access	+			
1326. Impact on Utilization/ nutrition	+			
1327. Impact on Stability	0			

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

1328. Impact on most vulnerable people	Under 5s		
1329. Impact on women	+		
1330. Impact on children	++		
1331. Impact on marginalized populations	Specify as appropriate: Urban +		
1332. Cost to address the issue		Middle	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide  
Impacts of 4-7 items are theoretical depending of the selected country and of the availability and cost of seeds  
Impacts of 8-11 items are extremely relevant

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		YES	
Moment to act to address the issue	NOW		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.			High
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In 3 lines maximum  
Animal experience: Pigs on o2 diet were 30 kg heavier than those on an unmodified food (4)  
Human (children): FAO Nitrogen balance (5)

#### 6. Linkages with SDGs (1 to 17)<sup>114</sup>

<sup>114</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 2

## 7. The case being, linkages with any other issue

International Pediatric Association could cooperate in the selected country

## 8. Additional Supporting Information

### *Additional information*

Genetic engineering can not only increase essential amino acids but the grain protein contents (6)  
Safety of transgenic lysine-rich grains (7)

### *Evidence*

To my knowledge there are no randomized controlled trial neither case-control studies on lysine enriched sorghum ( PubMed, Cochrane Col)

### *Knowledge gaps*

Transform corn for greater content of lys and protein is easier than in sorghum plants.

### *References*

1. Institute of Medicine of the National Academies. Dietary Reference Intakes: Protein and Amino Acids. JJ Otten, JP Hellwig, LD Meyers, Editors. ISBN 0-309-10091-7. National Academies Press. Washington DC 2006 page 149.
2. Mertz ET, Bates LS, Nelson OE. Mutant gene that changes protein composition and increases lysine content of maize endosperm. Science 1964; 145: 279-280.
3. Chang Y, Shen E, Wen L, Yu J, Zhu D, Zhao Q. See-specific expression of the Arabidopsis AtAMAP18 gene increases both lysine and total protein content in maize. PLOS one doi: 10.1371/journal.pone.0142952 2015.
4. Rockefeller Foundation. The Concise Encyclopedia of Food & Nutrition: Corn. AH Ensminger. ME Ensminger, JE Konlande, JRK Robson. Editors. ISBN 0-8493-4455-7 Boca Raton 1995, page 235.
5. FAO Corporate Document Repository. Chapter 8 Improvement of maize diets.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

<http://www.fao.org/docrep/t0395e/to395e0c.htm>.

6. Wenefrida I, Utomo HS, Linscombe, SD. Mutational breeding and genetic engineering in the development of high grain protein content. J Agric Food Chem 2013; 61: 11702-10.
7. He XY, Tang MZ, Luo YB, Cao SS, Yu JJ, Delaney B.A 90-day toxicology study of transgenic lysine-rich maize grain (Y642) in Sprague-Dawley rats. Food Chem Toxicol 2009; 47: 425-32.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Claudio Schuftan, PHM		
Do you answer on behalf of your institution, or as an individual?	On behalf	X	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	PHMIS GLOBAL. I AM IN VIETNAM		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P9A Consistent Refusal/Neglect Of The UN System To Adopt The Concept Of Food Sovereignty</i>		
Description of the issue <i>in less than 5 lines</i>	DESPITE MANY EFFORTS OF CSM MEMBERS, THE CONCEPT DOES NOT APPEAR IN CFS LINGO		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	BOTH
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	LA VIA CAMPESINA HAS DEVELOPED THE CONCEPT FOR YEARS NOW AND HAS JUSTIFIED ITS CENTRALITY. ITS LITERATURE IS CLEAR ABOUT IT AND THE HLPE CAN EXPLORE THE SAME		

Main response proposed to address the issue	CFS TO PUT THIS ON THE AGENDA FOR DISCUSSION AND APPROVAL. THE IMPLICATIONS ARE KEY FOR OPERATIONALIZING THE RIGHT TO FOOD –A TASK THE CFS IS COMMITTED TO.
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

HLPE TO RECOMMEND THIS IN NO UNCERTAIN TERMS. MEMBER STATES, CSM, PSM AND CFS PLENARY TO ACT ON THE HLPE RECOMMENDATION.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			BOTH

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					ALL. A MATTER OF PRINCIPLE
Nature of the main impact of the issue on FSN					ALL AND UNPOSTPO NABLE

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: FOR MANY OF US, IT REMAINS A CLUE WHY THE HLPE AND THE CFS HAS NOT ADOPTED FOOD SOVEREIGNTY AS A CENTRAL TENET OF THE RIGHT TO FOOD. THERE MUST BE UNDERLYING PRESSURES FROM EITHER MEMBER STATES (OR OTHERS?) TO PRECLUDE ADOPTING FOOD SOVEREIGNTY. PUBLIC INTEREST CSOS AN SOCIAL MOVEMENTS WILL GLADLY FILL IN DETAILED JUSTIFICATIONS AND STEPS TO FOLLOW AFTER A DESIRED ADOPTION OF THE CONCEPT.

## 3. Attributes of the Issue

	Classification (**)			
1333. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point X		Systemic issue X	
1334. Breadth: Are there many people affected?			MANY	
1335. Scale: local/national/regional/global?	Local	National	Regional	Global X
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

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1336. Impact on Availability	++		
1337. Impact on Access	++		
1338. Impact on Utilization/ nutrition	++		
1339. Impact on Stability	++		
1340. Impact on most vulnerable people	++ Specify as appropriate		
1341. Impact on women	++		
1342. Impact on children	++		
1343. Impact on marginalized populations	++Specify as appropriate		
1344. Cost to address the issue	Low		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: ONCE THE CONCEPT OF FOOD SOVEREIGNTY IS UNDERSTOOD IT BECOMES CLEAR WHY THE IMPACT WILL BE VERY POSITIVE FOR ALL THE CATEGORIES ABOVE.

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: THIS IS ALREADY LONG OVERDUE AND NEEDS REDRESSING.....NOW.

#### 5. Degree of confidence

Solidity of currently available knowledge base.			High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: AGAIN, LA VIA CAMPESINA (BUT NOT ONLY THEM) HAS PROVIDED A SOLID KNOWLEDGE BASE. THIS IS WHY I SUSPECT THE HLPE IS UNDER SOME TYPE OF EXTERNAL PRESSURE TO REFUSE.

#### 6. Linkages with SDGs (1 to 17)<sup>115</sup>

<sup>115</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
THIS IS QUITE OBVIOUS, BUT THE ACTION NEEDED BY THE HLPE (AND THE CFS) IS  
CENTRAL REGARDLESS OF THE SDGs. THIS WAS OF HIGHEST RELEVANCE ALREADY IN  
THE MDGs ERA...

**7. The case being, linkages with any other issue**

THE MOST OBVIOUS, OF COURSE, IS THE RIGHT TO FOOD (ADDING) AND TO ADEQUATE NUTRITION

**8. Additional Supporting Information**

*Additional information*

HARDLY NEEDED. FACTS ALREADY WELL KNOWN. THIS REQUEST IS TO REPAIR A LONG TIME OMISSION.

*Evidence*

AS SAID, AVAILABLE FROM MANY SOURCES.

*Knowledge gaps*

NONE, REALLY. THE EVIDENCE IS ALREADY IN.

*References*

MULTIPLE LA VIA PUBLICATIONS AND PRESENTATIONS INFRONT OF UN BODIES.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Flachowsky, Gerhard; (Prof. Dr. habil.; Senior Visiting Scientist); Institute of Animal Nutrition; Braunschweig, Germany	
Do you answer on behalf of your institution, or as an individual?		As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	Germany; Retired Scientist	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	P10A Plant breeding for resource efficient feed and food production		
Description of the issue <i>in less than 5 lines</i>	Plant breeding as the starting point for human food chain and for a sustainable and environmental friendly food security and nutrition (see Flachowsky 2013; Flachowsky and Meyer 2015; CGEC 2016).		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Plant breeding may be considered as the starting point of the human food chain. To overcome hunger and malnutrition for the growing world population, we need plants with high and stable yields and poor in undesirable substances under consideration of limited natural resources, (e.g. arable land, water, fuel, some minerals), resistant against abiotic and biotic stressors, lower emissions (e.g. methane, laughing gas, carbon dioxide etc.) and more efficient in use of unlimited natural resources (e.g. nitrogen and carbon dioxide from the air, genetic pool etc.)		

Main response proposed to address the issue	Public authorities
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Main actor(s) concerned or involved in the response proposed

Public research, supported by public institutions.  
Private companies are interested to make money. That means, they are only interested in plant breeding which may guarantee any financial return from the market (see CGEC; 2016).

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			See above (1.)

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue				X	
Nature of the main impact of the issue on FSN				X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

We need feed and food plants, which are characterized by high and stable yields, resistant against biotic (insects etc.) and abiotic (e.g. heat, drought, cold etc.) stressors and very efficient in the use of limited resources (e.g. water, fertilizers etc.)

## 3. Attributes of the Issue

	Classification (**)			
1345. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
1346. Breadth: Are there many people affected?				Many
1347. Scale: local/national/regional/global?	Local	National	Regional	Global

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1348. Impact on Availability	++
1349. Impact on Access	++
1350. Impact on Utilization/ nutrition	++
1351. Impact on Stability	++
1352. Impact on most vulnerable people	++ (poor people)

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1353. Impact on women	++		
1354. Impact on children	++		
1355. Impact on marginalized populations	Specify as appropriate		
1356. Cost to address the issue			High in time and money

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

More efficient plant resulting from plant breeding may overcome hunger and malnutrition and may substantial contribute to food security and nutrition.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue			X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

Plant breeding incl. bioengineering is a long term (and never ending) process. HLPE should follow some proposals of the CGEC (2016).

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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CGEC (2016) gives an excellent overview about present stage of plant breeding and future challenges to plant breeders.

#### 6. Linkages with SDGs (1 to 17)<sup>116</sup>

<sup>116</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

The most relevant SDG is “zero Hunger” and to overcome malnutrition. The objective of the present project may substantially contribute to produce sufficient food of plant and animal origin.

**7. The case being, linkages with any other issue**

The project has some linkages to other SDG-issues, such as “No Poverty” and “Good Health and Well-Being”.

Sufficient nutrition in quantity and quality should be considered as the most important health and well-being. Apart peace, hunger may be considered as one of the most reasons for flight from such countries (see Afghanistan, Syria and many other countries). In addition, healthy people are able to work and to reduce poverty.

In addition, people free of hunger and malnutrition are interested in high quality education and further SDG's.

**8. Additional Supporting Information***Additional information*

From my view, to make (maximal) profit on the base of human and natural resources incl. environment is one of the main reasons of poverty, hunger and malnutrition of many people in many countries.

*Evidence*

International organizations (like UN) should contribute to overcome such imbalances (see above; incl. exploitation of so-called developing countries; such as brain drain, land grabbing, exploitation of natural resources, such as forest, mineral resources, water etc.).

*Knowledge gaps*

- All methods of plant breeding (traditional and biotechnology) should be used to improve food security and nutrition.
- Plant breeders should more consider the present global situations (e.g. increase of temperature and CO<sub>2</sub> in the air; less water) and the results of plant breeding should contribute to high and stable yields with a low content of undesirable substances and a high availability of nutrients. From my view, these objectives seem to be more important for food security and a sustainable nutrition than an increase of the content of special nutrients/substances (e.g. amino acids, vitamins, minerals etc., which can be added by feed and/or food additives).
- I want to repeat that plant breeding (and to a lower extent also animal breeding; Niemann et al. 2011) should be more supported by public funds (see also 1.). The results of plant breeding should be available for all countries/people/farmers interested in the use.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

Committee on Genetically Engineered Crops (CGEC; 2016): Past Experience and Future Prospects; Board on Agriculture and Natural Resources; Division on Earth and Life Studies, National Academies of Sciences, Engineering, and Medicine; Genetically Engineered Crops: Experiences and Prospects. Washington, DC: The National Academies Press. 420 p.; doi:10.17226/23395

Flachowsky, G. (Ed.; 2013) Animal nutrition with transgenic plants; CABI Biotechnology series; 1; CAB International; Wallingford, UK & Boston, USA; 234 p.

Flachowsky, G., Meyer, U. (2015) Challenges for plant breeders from the view of animal nutrition. Agriculture 5; 1252-1272

Niemann, H., Kuhla, B., Flachowsky, G. (2011) Perspectives for feed efficient animal production. Journal of Animal Science 89, 4344-4363



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Dr Diana Lee-Smith	
Do you answer on behalf of your institution, or as an individual?		As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	Kenya, answering from a regional perspective, as previous African Regional Coordinator of Urban Harvest (2002-2006), a program of CGIAR	

#### 1. Overview of the issue

Issue in 2 lines	<i>P11A Urban agriculture can improve food and nutrition security for vulnerable groups</i>		
Description of the issue in less than 5 lines	Both food security and nutrition security are associated with urban agriculture (UA). Slum dwellers and poor female headed households (FHH) are less likely to practice UA. They are also more often food insecure.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box		Opportunity	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Multiple regression analysis in Kampala showed aspects of UA associated with food security (land size, livestock, gender and female education). Nutrition security associated with eating animal-sourced foods. 77% urban poor and FHH in 11 African cities food insecure. Urban poor and FHH less likely to practice UA than higher income groups who have backyard space. Urban poor & FHH use insecure open space or cannot farm.		

Main response proposed to address the issue	Urban land should be allocated to food production (agriculture including livestock) by vulnerable groups: slum dwellers and women-headed households in particular. This should be a policy for urban authorities. They should also support and regulate UA within their jurisdictions.
Main actor(s) concerned or involved in the response proposed	Urban local governments, in establishing policy and allocating land for UA and regulating its use by vulnerable groups, especially poor FHH for crop and livestock production. National governments in providing policy framework.

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*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		UA is part of the food system	

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue				X	
Nature of the main impact of the issue on FSN	Higher urban food availability	Dietary diversity for vulnerable groups	Improve urban land use for climate control, Re-use of wastes in UA	New urban institutions for managing UA	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Administrative change will benefit vulnerable slum dwellers through access to fresh veg and animal source foods, addressing non-communicable plus communicable disease. Malnutrition high among urban poor especially FHH. Lack of dietary diversity causes obesity (reliance on sugars- starches).

## 3. Attributes of the Issue

	Classification (**)			
1357. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point XX			
1358. Breadth: Are there many people affected?				ManyXX 90 million in Africa
1359. Scale: local/national/regional/global?	Local	National	Regional	XXGlobal
			XXXData on Africa, could be wider	

For items 4-11 below, please use the classification [ — —, —, 0, +, ++]: Predicted impacts of response proposed  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1360. Impact on Availability	++
1361. Impact on Access	++
1362. Impact on Utilization/ nutrition	++
1363. Impact on Stability	0
1364. Impact on most vulnerable people	XXResponse is specifically targeted to them
1365. Impact on women	XX Response is specifically targeted to them
1366. Impact on children	XX Will benefit from diet change from main caregiver
1367. Impact on marginalized populations	Urban slum dwellers constitute a marginalized group
1368. Cost to address the issue	XX Low

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(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Numbers are weak but 180 million in Africa involved in UA, perhaps 90 million poor. Cost is low (administrative change, institution-building) relative to impact on access to and availability of dietary diversity for a very large vulnerable group. NB UA is an income substitute for food access.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X		
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Some African cities already have institutions suitable to this response, others should be created. Food or agriculture departments of urban local authorities (with accompanying legislation) can allocate land for UA by slum dwellers and FHH

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Xx Middle	
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The data on urban poor malnutrition are solid. Numbers on UA are weak in Africa and non-existent elsewhere, but undoubtedly large. Data on UA links to FSN sound but require replication. Same for data on UA income spread, classification of backyard v open space UA,

#### 6. Linkages with SDGs (1 to 17)<sup>117</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
SDG 2 End Hunger. Target 2 (malnutrition) and Target 3 (women's production)

SDG 5 Gender Equality. Target 5 (women's economic resources, control over land).

SDG 8 Decent Work. Target 5. (men's and women's work)

SDG 10 Reduced inequalities

SDG 11 Sustainable Cities Target 7 women's access to green public space. Target 9 Inclusion

#### 7. The case being, linkages with any other issue

<sup>117</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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As 2. Above, environmental dimensions of UA include nutrient cycling (re-use of urban liquid and solid wastes as NPK for agriculture) and climate change mitigation. However, these do not directly affect FSN

This issue relates to four of the HLPE-FSN first five issues, 1. Healthy Nutrition in Changing Food Systems, 2. Livestock Systems and FSN, 3. Inequalities in FSN: needs of disadvantaged and vulnerable, and 5. Pathways to Sustainable Food Systems; human and environmental health. It is integral to support for small farmers generally and to implementation of the Right to Food. Governments are obliged to permit people to provide themselves with food (respect the right) and to restrain others who would prevent them from doing so (protect the right). Providing land for food production (UA) for vulnerable and disadvantaged constitutes fulfillment of the right.

## 8. Additional Supporting Information

### *Additional information*

The issue emerges from research and scholarly writing on the subject of urban agriculture over several decades. Most recently it emerged as the priority issue for a study of urban and peri-urban farming systems (Lee-Smith et al 2016 forthcoming). In parallel with the evidence, it has been a priority issue for those addressing interventions on urban food security and urban agriculture, especially Resource Centres on Urban Agriculture and Food Security (RUAF). The legislation of Nairobi City County (2015 Act on UA) represents a pioneering intervention along these lines. At the international level, it relates to the upcoming Habitat III UN meeting in Quito, October 2016, where all UN agencies will be present. Food security is a key point on the outcome document, the New Urban Agenda, which also reflects the need to design and govern urban spaces with vulnerable groups at the center. The issue is also an outgrowth of the HLPE processes on Gender, Social protection, water, and the current process on Urbanization and rural transformation.

### *Evidence*

Statistics on low income urban dwellers being able to farm less originates from Foeken (2006) on Nakuru, Kenya. See also Lee-Smith et al (2016 forthcoming). Links between food and nutrition security originate from regression analysis in Kampala, see Sebastian et al and Yeudall et al (2008). Statistics on food insecurity and lack of dietary diversity among the urban poor originate from Frayne et al (2010) and Kimani-Murage et al. (2014). Statistics on the extent of urban farming (such as they are) can be found in Lee-Smith et al. (2016 forthcoming). See also Lee-Smith and Lamba (2015) for a discussion of the evidence in relation to the right to food and nutrition security.

### *Knowledge gaps*

Apart from the need to replicate the studies mentioned here in similar contexts globally, there is a gap on the connection between poverty and UA. It is not known whether poverty alleviates UA or whether those with higher incomes are able to practice it. Cohort studies are needed to test this connection. Similarly, follow-up studies will be needed to assess the nutritional and food security impacts of the response proposed.

### *References*

Foeken, D. (2006) *“To Subsidize my Income” Urban Farming in an East African Town*, Brill, Leiden, Boston

Frayne, B., Pendleton, W., Crush, J., Acquah, B., Battersby-Lennard, J., Bras, E., Chiweza, A., Dlamini, T., Fincham, R., Kroll, F., Leduka, C., Mosha, A., Mulenga, C., Mvula, P., Pomuti, A., Raimundo, I., Rudolph, M., Ruysenaa, S., Simelane, N., Tevera, D., Tsoka, M., Tawodzera, G. and Zanamwe, L. (2010) ‘The state of urban food insecurity in southern Africa’, *Urban Food Security Series*, no 2, Queen’s University and AFSUN, Kingston and Cape Town

Kimani-Murage, E. W., L. Schofield, F. Wekesah, S. Mohamed, B. Mberu, R. Ettarh, T. Egondi, C. Kyobutungi, and A. Ezech (2014) *Vulnerability to Food Insecurity in Urban Slums:*

Experiences from Nairobi, Kenya, *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, Vol. 91, No. 6 doi:10.1007/s11524-014-9894-3.

Lee-Smith, D. and Lamba, D. (2015) Nutrition and urban agriculture in sub-Saharan African cities, in *Right to Food and Nutrition Watch*, Issue 07 2015

Lee-Smith, D.; Prain, G.; Cofie, O.; van Veenhuizen, R.; Karanja, N. (2016, forthcoming). Urban and Peri-Urban Farming Systems (UPUFS): feeding cities and enhancing resilience, in *Farming Systems and Food Security in Sub-Saharan Africa: Priorities for Science and Policy under Global Change*. Eds. John Dixon, Dennis Garrity, Jean-Marc Boffa, Tim Williams and Tilahun Amede, London, Earthscan

Sebastian, R., Lubowa, A., Yeudall, F., Cole, D. and Ibrahim, S. (2008) 'The association between household food security and urban farming in Kampala', in D. C. Cole, D. Lee-Smith and G. W. Nasinyama (eds) (2008) *Healthy City Harvests: Generating Evidence to Guide Policy on Urban Agriculture*, CIP/Urban Harvest and Makerere University Press, Kampala, Uganda and Lima, Peru. pp. 69–87

Yeudall, Y., Sebastian, R., Lubowa, A., Kikafunda, J., Cole, D. and Ibrahim, S. (2008) 'Nutritional security of children of urban farmers', in D. C. Cole, D. Lee-Smith and G. W. Nasinyama (eds) (2008) *Healthy City Harvests: Generating Evidence to Guide Policy on Urban Agriculture*, CIP/Urban Harvest and Makerere University Press, Kampala, Uganda and Lima, Peru. pp. 89–103

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Professor Mary Renfrew, Mother and Infant Research Unit, University of Dundee, Scotland</b> <b>Emeritus Professor George Kent, Univ of Hawaii.</b> <b>Associate Professor Julie Smith, Dr Phil Baker, and Libby Salmon, RegNet: School of Regulation and Global Governance, Australian National University.</b> <b>Dr JP Dadhich, IBFAN/BPNI New Delhi</b> <b>Radha Holla, Independent Researcher</b> <b>Alessandro Iellamo, Independent Consultant</b>		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	United Kingdom, United States, Australia, India		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P12A Neglect of children's nutrition &amp; breastfeeding (BF) causing rising food insecurity, malnutrition, ill health</i>		
Description of the issue <i>in less than 5 lines</i>	Maternal BF is the global food security & nutrition system for infants & young children (IYC), but milk formula (MF) is rapidly substituting this as maternity protection, health services reform & marketing rules to protect BF are weakly implemented or resourced.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Children, especially infants & young children are uniquely vulnerable to food insecurity. Rapid & large scale shifts to MF feeding are disrupting optimal breastfeeding, revealed by booming MF sales. Countries' growing dependence on MF is an IYC food system disruption and loss of BF capacity, a crucial global food security and nutrition issue with large economic costs. Poor maternity protection, maternity services, & aggressive MF marketing are unaddressed causes of malnutrition & ill health.		
Main response proposed to address the issue	1. Focus world attention on children's nutrition, beginning with a call to strengthen international and national policy development, coordination and governance processes to increase societal		

	<p>investments in breastfeeding protection, support and promotion, including by international agencies, governments and employers. This could be through promoting an Optional Protocol to the Convention on the Rights of the Child (CRC) to help address countries' failure to effectively implement current international and national regulatory regimes designed to protect and promote optimal infant and young child feeding. This treaty-like protocol on child nutrition is mainly about principles and would assert the importance of human rights in relation to children's nutrition. Such a protocol addressing the food security and nutrition of IYC will provide new impetus on addressing women's right to be enabled to breastfeed their child, including through strengthening of women's human rights in the Convention on Elimination of All Forms of Discrimination Against Women (CEDAW). The WHO/UNICEF Global Strategy on Infant and Young Child Feeding (GSIYCF) provides the basis for appropriate guidance, and encourages the resourcing and implementation of comprehensive integrated policies. Key elements include ILO maternity protection, WHO International Code implementation and Baby Friendly Hospital Implementation (BFHI), and protecting BF in emergencies.</p> <p>2. In the short and medium term, there are important existing mechanisms that should be urgently optimized for a focus on early nutrition. These include CRC reporting and comments from the Committee, which can be utilized to emphasise the importance of optimal breastfeeding of IYC. This can include mandating/enlisting countries to report on how breastfeeding protection, promotion and support is being supported and financed. It may also involve including in the CRC report the status of implementation of General Comment 16 on State obligations regarding the impact of the business sector on children's rights. Other types of documents are authoritative in relation to the human right to adequate food, for example, General Comment 12.</p> <p>3. The child's right to adequate nutrition through optimal breastfeeding requires protection of the mother's practical right to breastfeed her child. Introducing a Global Fund for Maternity Protection could help ensure effective implementation of the ILO Convention on Maternity Protection for all women, thus improving food security for children and their mothers and families. This could further enhance efforts to strengthen the reproductive rights of women.</p>
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed	<p>ILO, FAO, WHO, UNICEF, national and subnational governments, the food and pharmaceutical industries, civil society and non-government organizations, health professionals, health service providers, and employers.</p> <p>Policy makers in agriculture, infant and maternal health, intellectual property and commercial competition (anti-trust); suppliers and manufacturers of infant milk formula; infant and maternal health and childcare service providers and managers; employers of women in unpaid and paid occupations.</p>
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*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	<p>✓</p> <p>Maternity Protection BFHI</p>	<p>✓</p> <p>WHO International Code</p>	<p>Briefly mention how this may be the case</p> <p>A breastfeeding mother and her infant are a robust physiologically self-regulating food system that can be restricted by external drivers, including public policy on health, labour and marketing. A woman's production of breastmilk decreases if demand is reduced, for example by feeding milk formula or premature weaning. A woman's physical capacity, agency and confidence to breastfeed are reduced if she cannot access her baby or express and store her breastmilk because of social barriers to breastfeeding (e.g. taboos on breastfeeding in public), distance between childcare and work (paid or unpaid), limited time (e.g. through travel or inadequate maternity leave) or inflexible work conditions (e.g. no workplace lactation breaks) and a lack of consistent skilled support from healthcare providers.</p> <p>With global market integration the traditional IYC feeding systems of developing countries (i.e. predominantly breast-feeding and home-prepared complementary foods) can be displaced by, and thus increasingly dependent on, the imports, investments and marketing practices of transnational milk formula corporations. The biology of breastfeeding means that the form of dependency is extreme when short-term lactation capacity is lost at an individual level (i.e. mammary involution due to bottle-feeding) and</p>



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			when cultural norms are changed (i.e. a shift from 'breastfeeding' to 'formula-feeding' culture) at the population level. Commercial marketing and promotion facilitates this dependency by normalizing formula as an appropriate food for all infants rather than as a specialized food for those unable to breast-feed.
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(*)	<i><b>Economic (and productive)</b></i>	<i><b>Social (and Cultural)</b></i>	<i><b>Environmental (resources, etc.)</b></i>	<i><b>Governance (institutions, rights, etc.)</b></i>	<i><b>Other (SPECIFY)</b></i>
Main nature of the issue	✓	✓	✓	✓	
Nature of the main impact of the issue on FSN	Loss of breastmilk production (millions of litres), added household costs of baby formulas, costs to health systems and loss to infant of intellectual capacity and future health. Loss to mother of her future health.	Loss of knowledge and skills required for a culture to sustain breastfeeding. Unequal employment opportunities for women who lack workplace and social support to breastfeed.	Pollution of water and production of greenhouse gases from production and distribution of dairy-based baby milks and plastic feeding vessels. Baby milks divert high quality dairy-based protein from children and adults to infants.	Failure of national governments to uphold the rights of children to be breastfed (CRC) and the rights of women to breastfeed (CEDAW). Failure to implement WHO infant and young child feeding policy (GSIYCF) and to restrict aggressive marketing of infant formula (WHO Code). Weak IYCF monitoring and accountability mechanisms.	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Social and institutional failures to protect and support maternal breastfeeding represent discrimination against the rights of children and women to food security, and harm their social, health and economic wellbeing. Milk formula feeding of IYC adds to greenhouse gas and environmental contaminants.

### 3. Attributes of the Issue

	<i><b>Classification (**)</b></i>	
1369. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point	<b>Systemic issue</b>

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1370. Breadth: Are there many people affected?	Few			Many
1371. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1372. Impact on Availability	— — Once lost, women's breastmilk supply is difficult to regain, and partial or complete dependency on alternative baby milks or premature weaning occurs, unless wet-nursing is an option.			
1373. Impact on Access	— — Access to breastfeeding may be restricted by maternal time pressures, including from inadequate work conditions and lack of social protection and family support e.g. maternity leave, and by lack of access to skilled care and support for breastfeeding in health services.			
1374. Impact on Utilization/ nutrition	— — Breastfeeding is central to optimal infant and young child nutrition and development and prevention of illness and deaths from gastrointestinal and respiratory infections, and lifetime risks for non-communicable diseases. Breastfeeding is a highly energy efficient way to feed a baby, requiring mothers to consume an additional 2.1-2.8 MJ/day for 6 months. In times of shortage mothers/carers may over-dilute milk formula leading to IYC undernutrition. Unclean water supply and poor sanitation can impair the safe utilization of formula.			
1375. Impact on Stability	— — Once lost, women's breastmilk supply is difficult to regain, and partial or complete dependency on alternative foods and baby milks can occur. Households suffering employment and income stresses may not be able to afford a stable supply of milk formula or bottles and teats, especially during times of economic hardship/crisis. Availability of baby milks may become impaired due to supply chain disruptions, particularly in remote settings. Disruptions to clean water supply during natural disasters can impair the safe utilization of formula.			
1376. Impact on most vulnerable people	— — All infants and young children are vulnerable by virtue of systems being immature and fast-developing, and totally reliant on one food for months (unlike any other population groups). Furthermore, suboptimal breastfeeding has the largest effect on the health of disadvantaged groups and in low and middle income settings, especially where clean water is not available to reconstitute infant formula. In high income settings, the most disadvantaged groups receive the least social and economic support to breastfeed. Infants who are not breastfed are especially vulnerable in natural disasters where supplies of milk formula and clean water are compromised.			
1377. Impact on women	— — Breastfeeding mothers may not have access to some occupations and types of work. Suboptimal breastfeeding also increases the likelihood of breast and ovarian cancers in women. Not breastfeeding can lead to distress for the mother, and can potentially disrupt attachment and family relationships.			
1378. Impact on children	— — Evidence on the health and developmental implications of formula feeding comes from studies comparing never and partially breast-fed v. breast-fed infants, including significant increased risks of all-cause mortality, diarrhoea and pneumonia mortality, obesity and type 2 diabetes, otitis media, malocclusion, asthma and sudden infant death syndrome. Non-breast-fed children			

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	also demonstrate significantly lower IQ (intelligence quotient) scores, robust to adjustments for maternal IQ.		
1379. Impact on marginalized populations	— Marginalized populations include poor, disempowered women in most countries, without access to social and economic support for breastfeeding or whose work and childcare arrangements do not accommodate breastfeeding (e.g. women in low paid factory work, hawking goods in dense traffic, rubbish picking, harvesting crops).		
1380. Cost to address the issue	Low – highly cost-effective and effective interventions are known	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Children's food security & nutrition has been neglected in food security discourse. Breastfeeding is central to global food security & health, improves child health equity and contributes to realization of rights to food and health. Its disruption affects the most vulnerable populations of IYC & mothers.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	✓	✓	✓
Moment to act to address the issue	✓	✓	✓

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Rapidly rising MF sales requires urgent responses. Improvements in exclusive BF have plateaued & only a third of infants are breastfed exclusively to 6 months, continued breastfeeding is declining. Displacing traditional breastfeeding is loss of cultural knowledge & extremely difficult to reverse.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

WHO recommendations on IYCF and policies to protect, promote and support breastfeeding (GSIYCF) are based on strong evidence of significant links between breastfeeding and health/development outcomes of infants/mothers and analyses of public health/economic impacts.

#### 6. Linkages with SDGs (1 to 17)<sup>118</sup>

<sup>118</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 2 – zero hunger and SDG 3 – good health and wellbeing are of equal importance.

## 7. The case being, linkages with any other issue

Linked to

SDG#5 – gender equality

SDG#10 – reduced inequalities

SDG#13 – climate action

## 8. Additional Supporting Information

### *Additional information*

Rapid increases in the global consumption of infant formula and processed baby foods in industrializing middle income countries, especially in Asia, indicate a loss of breastfeeding capacity and knowledge.

IYC are exposed to food insecurity and malnutrition risk if the mother is not enabled to breastfeed, and this requires suitable protection of secure access for mother and child, including for employed women. Policies that allow the displacement of physical milk production and cultural capacity to breastfeed leads to dietary dependence on processed food sources that may not be safe or affordable and directly contribute to IYC infectious diseases, deaths, and suboptimal development and poor maternal health.

### *Evidence*

Rapid regional shifts to milk formula feeding are disrupting optimal breastfeeding, as revealed by evidence of booming global MF sales. Countries' growing dependence on MF represents an IYC food system disruption and loss of BF capacity, a crucial global food security and nutrition issue. This has large economic losses and excess health costs, as has been shown for developed and developing countries. Infants and young children are particularly vulnerable to food insecurity as a result not only of their immature and fast-developing systems, but also because of their total dependence on a sole food, milk, for several months of their life. Mothers are also vulnerable to poor health and excess childbearing if maternal BF is not supported and adequately resourced. Inadequate maternity protection, inadequate breastfeeding support in maternity services, and aggressive MF marketing with lack of WHO International Code compliance, including in emergencies, are important unaddressed determinants of under and over-nutrition, and of child and maternal ill health. Addressing the issue of IYCF and children's rights to adequate food and to health through optimal breastfeeding may also enhance efforts to strengthen the rights of women, including to be supported and enabled to breastfeed, such as through CEDAW.

In 2008–2013 world total milk formula sales grew by 40·8% from 5·5 to 7·8 kg per infant/child/year, a figure predicted to increase to 10·8 kg by 2018. Growth has been most rapid in East Asia particularly in China, Indonesia, Thailand and Vietnam. These rapid changes are poorly captured by existing IYCF monitoring systems. The observed increase in milk formula sales raises serious concern for global child and maternal health, particularly in East Asia, and calls into question the efficacy of current regulatory regimes designed to protect and promote optimal IYCF and human rights of women and children. Women make substantial investments in BF through their time, and their contribution is poorly supported by contributions, such as maternity protection, from international agencies, governments and employers, to the detriment of women's human rights.

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Policies to protect, support and promote breastfeeding such as those set out in the WHO/UNICEF GSIYCF need strong implementation and resourcing by governments to take into account the emerging trade environment, which includes intensely competing, corporatized, and globalised supply chains for dairy-based milk formula.

New commitments to addressing the long-standing policy conflicts that surround IYCF and revenue from the manufacture and export of milk formula are urgently needed, especially amidst climate change to which MF contributes. Climate change and related extreme weather events are particularly damaging to women and children, and in emergency situations there are real risks of aggressive MF marketing exploiting opportunities to undermine breastfeeding practices.

Placing breastfeeding in a food security framework is urgently needed to achieve the political attention and policy co-ordination for accelerating action to redress suboptimal breastfeeding rates and protect food security and human rights for vulnerable IYC and maternal populations globally. A separate strengthening of the international human rights framework on women including on MP appears to be required with regard to breastfeeding in order to secure food security for IYC.

#### *Knowledge gaps*

Much regarding the crucial importance of optimal breastfeeding to human health and child development is well known and strongly evidenced. Lacking is the political commitment and resourcing of food security for infants and young children, and of the mothers who feed them. This is an important human rights issue that also translates into a food security and nutrition problem because optimal breastfeeding is the global food system for IYC. How to generate the required political commitment and resourcing is the key knowledge gap. Better knowledge is also needed on how to support women to continue BF in employment, including in the informal sector.

Existing global IYC nutrition monitoring systems have failed to capture the large contemporary increase in world formula consumption. There is an urgent need for longitudinal IYC food consumption data that is comparable at the country level. Addressing this knowledge gap will greatly strengthen institutional capacities to enhance IYC food security at global and national levels.

Improved understanding of the influence of transnational companies that manufacture baby milks, foods, and ingredients (e.g. including agribusiness that produce bovine milk formula) and plastic bottles and teats in setting international and national policy agendas for infant and maternal food security and health is needed.

Further lifecycle analysis of the global carbon and water footprint of milk formula and bottle and teat production and distribution is urgently required to gain better understanding of the environmental impacts of MF sales.

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

#### Questionnaire

**(Please fill a separate form for each issue identified)**

#### About the respondent

Name, Surname and Institution	Lisa KITINOJA, The Postharvest Education Foundation		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	USA with international reach		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P13A Integrating PHT for reducing FLW into national extension//advisory services (EAS).</i>		
Description of the issue <i>in less than 5 lines</i>	Currently postharvest technologies (PHT) for reducing food loss/waste (FLW) are rarely included in national EAS systems. Integrating PHT has the potential to improve nutrition, food security and rural economies.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>		Opportunity	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Desk study and intensive literature reviews, case studies and surveys of postharvest, food security and nutrition experts in 20 countries.		
Main response proposed to address the issue	Expand the focus of national EAS to include capacity building in postharvest technology, food processing, storage and marketing (reach beyond the current production focus).		



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Main actor(s) concerned or involved in the response proposed

National extension and advisory services, Ministries of agriculture, agricultural universities, international donors.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			FLW leads to huge losses of resources, money and poor nutrition/food access.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	x	x		
Nature of the main impact of the issue on FSN	Low incomes impact on food access	FLW impacts food security	Waste of land, water, labor, seeds, etc, loss of potential income		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

## 3. Attributes of the Issue

	Classification (**)			
1381. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
1382. Breadth: Are there many people affected?				Many
1383. Scale: local/national/regional/global? <b>ALL of the ABOVE! But especially local and global (think globally, act locally)</b>	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1384. Impact on Availability	-- food losses negatively affect availability			
1385. Impact on Access	-- food losses negatively affect access			
1386. Impact on Utilization/ nutrition	-- food losses negatively affect nutrition			
1387. Impact on Stability	-			

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1388. Impact on most vulnerable people	-- <b>Appropriate</b> Specify as appropriate		
1389. Impact on women	--		
1390. Impact on children	--		
1391. Impact on marginalized populations	-- <b>Appropriate</b> Specify as appropriate		
1392. Cost to address the issue			<b>High</b>

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in **section 8 below**.

**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in **section 8 below**.

**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

#### 5. Degree of confidence

Solidity of currently available knowledge base.			<b>High</b>
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**In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:**

#### 6. **Linkages with SDGs (1 to 17)**<sup>119</sup>

<sup>119</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

**SDG 12.3 target – reduce postharvest food losses/waste by 50% by 2030**

**7. The case being, linkages with any other issue**

Reducing food losses/waste from the current high levels will assist achieving the targets for SDG 2 (zero hunger)

**8. Additional Supporting Information**

*Additional information*

*Evidence*

HLPE on Food Loss/Waste, FAO (2011) and IMechE (2013) outlined and discussed the main issue and documented high levels of food loss/waste. This approach or solution (integrating postharvest topics/issues into traditional extension/advisory services) is one way to address this problem.

Food Losses and Waste in the context of sustainable food systems

UN FAO HLPE on Food Security and Nutrition July 2014

[http://www.fao.org/fileadmin/user\\_upload/hlpe/hlpe\\_documents/HLPE\\_Reports/HLPE-Report-8\\_EN.pdf](http://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/HLPE_Reports/HLPE-Report-8_EN.pdf)

FAO (Gustavsson, J et al) 2011. Global food losses and food waste.

[http://www.fao.org/fileadmin/user\\_upload/sustainability/pdf/Global\\_Food\\_Losses\\_and\\_Food\\_Waste.pdf](http://www.fao.org/fileadmin/user_upload/sustainability/pdf/Global_Food_Losses_and_Food_Waste.pdf)

IMechE report: Global food: waste not, want not. Jan 2013

[http://www.imeche.org/docs/default-source/reports/Global\\_Food\\_Report.pdf?sfvrsn=0](http://www.imeche.org/docs/default-source/reports/Global_Food_Report.pdf?sfvrsn=0)

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*Knowledge gaps*

Kitinoja (2015), Kitinoja et al (2011), Lipinski et al (2013), Rockefeller Fdn (2014) and Affognon et al (2015) documented the missing elements and advocated extension/ education/ capacity building, and outreach efforts.

*References*

Kitinoja, L. (2015) Keynote address for the ADMI PHL Congress (video)

<https://www.youtube.com/watch?v=lvEDqRRlxd8&index=1&list=PLLM8zm8e2TaImk3lw18SWDKVAu5HU681y>

embed code

```
<iframe                                width="854"                                height="480"
src="https://www.youtube.com/embed/lvEDqRRlxd8?list=PLLM8zm8e2TaImk3lw18SWDKVAu5HU681y" frameborder="0" allowfullscreen></iframe>
```

Rockefeller Foundation Global Knowledge Initiative (2014)

“Reducing Food Waste and Spoilage: Assessing resources needed and available to reduce post harvest food loss in Africa.” June 2014

[http://postharvest.org/Rockefeller%20Foundation%20Food%20Waste%20and%20Spoilage%20initiative%20Resource%20Assessment\\_GKI.pdf](http://postharvest.org/Rockefeller%20Foundation%20Food%20Waste%20and%20Spoilage%20initiative%20Resource%20Assessment_GKI.pdf)

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World Development Vol. 66, pp. 49–68, 2015

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<http://www.wri.org/resources/presentations/creating-sustainable-food-future-reducing-food-loss-and-waste>

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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

#### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	PD Dr. Charles Franz, MRI		
Do you answer on behalf of your institution, or as an individual?	on behalf of my Department of Microbiology and Biotechnology		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes X		
Country of the responding individual/institution Please mention international or regional, the case being	Max Rubner-Institut (MRI), Federal Research Institute of Nutrition and Food, Karlsruhe / Germany		

#### 1. Overview of the issue

Issue in 2 lines	<i>P14A Minimizing the development and incidence of antibiotic-resistant microorganisms in food</i>		
Description of the issue in less than 5 lines	The high use of antibiotics in clinics and in animal health has led to the development of multiply antibiotic-resistant microorganisms which occur in animal husbandry, in the environment and in the human gut. For some microorganisms there is evidence of a foodborne transmission from animals to plants to the human gut.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	x		It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Innovative technologies to prevent the development of antibiotic-resistant bacteria need to be adopted by governmental and human and animal health policies. These will include antibiotic stewardship as well as finding alternatives for antibiotic treatments. From the food technology perspective, methods to detect and type antibiotic resistant strains are needed. Furthermore, the transfer routes need to be investigated and innovative methods which interrupt the transfer routes need to be developed. These may rely on phage therapy for 1) as an alternative to antibiotic treatment and 2) phages as biocontrol agents for fighting antibiotic-resistant strains in the food supply. Lastly, food preservation methods which inactivate bacteria in general, such as fermentation, high pressure treatment and heating, can be applied also to improve the safety of traditionally produced foods with respect to antibiotic resistant bacteria.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	Research funding for cooperative scientific investigations local health authorities and public interest groups
Main actor(s) concerned or involved in the response proposed	Local academics and developed countries research institutions, local health authorities, food processors and public interest groups

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X	X	Briefly mention how this may be the case external: regarding e.g. climate change internal: regarding e.g. breeding technologies, postharvest technologies, farm management, know-how/capacity building

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X			X	X scientific aspect; aspect of capacity building, know-how, technological development
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	<b>Classification (**)</b>			
1393. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	YES X			SYSTEMIC TO DEVELOPING COUNTRIESX
1394. Breadth: Are there many people affected?				MANY x
1395. Scale: local/national/regional/global?	X	X	I	Global X
	X Sub-Sahara Africa AND SOUTH EAST aSIA	d other issues		

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1396. Impact on Availability	YES		
1397. Impact on Access	YES		
1398. Impact on Utilization/ nutrition	YES		
1399. Impact on Stability	YES		
1400. Impact on most vulnerable people	yES(small-scale farmers / poor farmers / poor people in Africa)		
1401. Impact on women	yES		
1402. Impact on children	YES		
1403. Impact on marginalized populations	YES (small-scale farmers / poor farmers)		
1404. Cost to address the issue	Low	Middle X	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	X	High
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

The issue of development of antibiotic-resistant bacteria is especially problematic in countries where there is high malnutrition and where health services are often at a lower standard when compared to developed countries.

**6. Linkages with Sustainable Development Goals (SDGs) (1 to 17)<sup>120</sup>**

>  
>sustainable production of food  
>

**7. The case being, linkages with any other issue**

the issue is directly linked with health issues, production of healthy and safe food, food security, food processing

**8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>120</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**Knowledge gaps**

New materials for fermentation, pathogens in stored products, knowledge on incidence and tenacity of pathogens in products, scientific basis for traditional fermentation regimes, storability of products.

**References**

1. Rostalsky, A. Cho, G.-S., Fiedler, G., Rösch, N., Li, B., Kabisch, J., Bockelmann, W., Hammer, P., Huys, G., and Franz, C.M.A.P. 2016. Characterization and antibiotic resistance of *Acinetobacter* strains from a milk powder manufacturing environment. *Global J. Antibiotic Res.* In preparation.
2. Abriouel, H., del Carmen Casada Munoz, M., Lavilla Lerma, L., Perez Montoro, B., Bockelmann, W., Pichner, R., Kabisch, J., Cho, G.-S., Franz, C.M.A.P., Galvez, A., Benomar, N. 2015. New insights in antibiotic resistance of *Lactobacillus* species from fermented foods. *Food Research International* 78, 465-481.
3. At the moment our institute has been leading research of all MRI food-related departments on the the issue of on antibiotic resistant bacteria in the food supply for about 2 years, within the auspices of a Germany Ministry of Nutrition and Agriculture project. Furthermore the Department will be hosting an Alexander von Humboldt Stiftung Georg Foster Sholarship recipient from Nigeria who will investigate and compare antibiotic resistant bacteria from Nigerian and German foods.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

#### Questionnaire

**(Please fill a separate form for each issue identified)**

#### About the respondent

Name, Surname and Institution	PD Dr. Charles Franz, MRI	
Do you answer on behalf of your institution, or as an individual?	on behalf of my Department of Microbiology and Biotechnology	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes X	
Country of the responding individual/institution Please mention international or regional, the case being	Max Rubner-Institut (MRI), Federal Research Institute of Nutrition and Food, Karlsruhe / Germany	

#### 1. Overview of the issue

Issue in 2 lines	<i>P14B Development of technologies to minimize postharvest losses for improved food security</i>		
Description of the issue in less than 5 lines	A high percentage (about 50%) of fresh foods are lost in developing countries as a result of postharvest spoilage. Here innovative technologies adapted to the local situations should be developed to decrease food borne spoilage and associated postharvest losses.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box		X	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Innovative technologies adapted to local situations will need to be developed and include food packaging innovations using local materials (e.g. fibres from plantain leaves=) or food preservation technologies based on local knowledge need to be industrialized e.g. fermentation or sun drying. Here the development also would need to involve food processing equipment and mechanization.		
Main response proposed to address the issue	Research funding for cooperative scientific investigations involving small to medium size enterprises, local authorities and public interest groups		

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Main actor(s) concerned or involved in the response proposed	Local academics and developed countries research institutions, local business, local authorities and public interest groups
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*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X	X	Briefly mention how this may be the case external: regarding e.g. climate change internal: regarding e.g. breeding technologies, postharvest technologies, farm management, know-how/capacity building

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X			X	X scientific aspect; aspect of capacity building, know-how, technological development
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1405. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	YES X		SYSTEMIC TO DEVELOPING COUNTRIESX	
1406. Breadth: Are there many people affected?			MANY x	
1407. Scale: local/national/regional/global?	X	X	I	Global X

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	<i>X Sub-Saharan Africa AND SOUTH EAST aSIA</i>	<i>d other issues</i>		
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For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1408. Impact on Availability	YES
1409. Impact on Access	YES
1410. Impact on Utilization/ nutrition	YES
1411. Impact on Stability	YES
1412. Impact on most vulnerable people	yES(small-scale farmers / poor farmers / poor people in Africa)
1413. Impact on women	yES
1414. Impact on children	YES
1415. Impact on marginalized populations	YES (small-scale farmers / poor farmers)
1416. Cost to address the issue	Low Middle X High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	X	High
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Africa has a long history of preservation of fresh foods by e.g. sun drying or fermentation. However, most processes are jon-controlled done on small scale and are not optimized. Thus these should be optimized based on scientific investigations and principles and with the help of local business and authorities

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with Sustainable Development Goals (SDGs) (1 to 17)<sup>121</sup>**

>sustainable nutrition  
>sustainable production of food  
>

**7. The case being, linkages with any other issue**

the issue is directly linked with health issues, healthy and safe food, food security, food waste management, breeding technology, pre-harvest and post-harvest technology, storage&transport conditions, harvest, food processing

**8. Additional Supporting Information**

*Additional information*

*Evidence*

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<sup>121</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

New materials for fermentation, pathogens in stored products, knowledge on incidence and tenacity of pathogens in products, scientific basis for traditional fermentation regimes, storability of products.

*References*

Regional fermented fruits and vegetables in Africa. 2016. In: Lactic acid fermentation of fruits and vegetables, Publisher: Taylor and Francis, Editors: Spiros Paramithiotis. pp.239-268.

Huch, M., and Franz, C.M.A.P. 2014. In: Advances in Fermented Foods and Beverages: Improving Quality, Technology and Health Benefits. Part 5: Particular products and approaches towards quality improvement and fermentation control, (ed. W.H. Holzapfel). Chapter 21. Coffee. Woodhead Publishing, Cambridge, UK. Pp. 510-513.

Oguntoyinbo, F.A., Cho, G.-S., Trierweiler, B., Bernhard Trierweiler, Jan Kabisch, Niels Rösch, Wilhelm Bockelmann, Lara Frommherz, Dennis S. Nielsen, Lukasz Krych, Charles M.A.P. Franz. 2016. Fermentation of African kale (*Brassica carinata*) using *L. plantarum* BFE 5092 and *L. fermentum* BFE 6620 starter strains. *Int. J. Food Microbiol.* 238, 103-112.

Oguntoyinbo, F.A., Fusco, V., Cho, G.-S. Kabisch, J., Neve, H., Bockelmann, W., Huch, M., Frommherz, L., Trierweiler, B., Becker, B., Benomar, N., Gálvez, A., Abriouel, H., Holzapfel, W., and Franz, C.M.A.P. 2016. Produce from Africa's gardens: Potential for leafy vegetable and fruit fermentations. *Frontiers in Microbiology* 7, 981.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for **Food Security and Nutrition**

#### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Prof. Dr. Kulling, Sabine, MRI and Dr. Haase, Norbert, MRI		
Do you answer on behalf of your institution, or as an individual?	on behalf X		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes X		
Country of the responding individual/institution Please mention international or regional, the case being	Max Rubner-Institut (MRI), Federal Research Institute of Nutrition and Food, Karlsruhe / Germany		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P14C Mycotoxin and aflatoxin in the food chain</i>		
Description of the issue <i>in less than 5 lines</i>	Diverse mycotoxins in the food chain can have an impact on food safety and security		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge X	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	The presence of mycotoxins and especially aflatoxin is an accepted and very important food safety issue, especially in Asian and African countries. That is demonstrated by a vast of literature data and ongoing projects.		
Main response proposed to address the issue	further research and dissemination of existing knowledge is needed from countries with a controlled food production and food surveillance towards less developed countries is needed.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X	X	Briefly mention how this may be the case external: regarding e.g. climate change internal: regarding e.g. breeding technologies, postharvest technologies, farm management, know-how/capacity building

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X			X	X scientific aspect; aspect of capacity building, know-how, technological development
Nature of the main impact of the issue on FSN	x				

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1417. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point X		Systemic issue X	
1418. Breadth: Are there many people affected?	Few		Many X	
1419. Scale: local/national/regional/global?	Local	National	Regional	Global X



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	Indicate here the precise location X e.g. some local areas in Sub- Sahara Africa	Indicate here the precise country X e.g. most of the countries in Sub- Sahara Africa like Kenya, Uganda, Tanzania mycotoxin, but also Asian countries /aflatoxin problems will emerge more and more on other continents like in Europe, due to climate change and other issues	Indicate here the precise region; X e.g. some regions in countries in Sub-Saharan Africa
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For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1420. Impact on Availability	-
1421. Impact on Access	-
1422. Impact on Utilization/ nutrition	XX
1423. Impact on Stability	0
1424. Impact on most vulnerable people	XX (small-scale farmers / poor farmers / poor people in Africa)
1425. Impact on women	XX
1426. Impact on children	XX
1427. Impact on marginalized populations	X (small-scale farmers / poor farmers)
1428. Cost to address the issue	Low Middle X High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

High concentrations of aflatoxin can be acutely toxic, however the permanent uptake of low concentrations of aflatoxin, as it might be the case in certain African countries, can especially negatively affect children, resulting in stunted growth.

#### 4. Time Scale

Timeframe (*)	Now/Short term	Medium term	Long term
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	<i>(1-5 years)</i>	<i>(5-10 years)</i>	<i>(10-20 years +)</i>
Moment when the issue will have an impact	X	X	
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There are currently many ongoing activities, however no short term solution can be expected.

### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle X	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The scientific knowledgebase is high, however the dissemination or the practical application of this knowledge is the bottle-neck

### 6. Linkages with Sustainable Development Goals (SDGs) (1 to 17)<sup>122</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

>sustainable nutrition

>sustainable production of food

>reduction of mycotoxin / aflatoxin in the food chain would reduce destruction of crops and food waste

### 7. The case being, linkages with any other issue

<sup>122</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

the issue is directly linked with health issues, healthy and safe food, food security, food waste management, breeding technology, pre-harvest and post-harvest technology, storage & transport conditions, harvest, food processing

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for **Food Security and Nutrition**

#### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Dr. Dagmar Brüggemann, MRI		
Do you answer on behalf of your institution, or as an individual?	on behalf X		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes X		
Country of the responding individual/institution Please mention international or regional, the case being	Max Rubner-Institut (MRI), Federal Research Institute of Nutrition and Food, Karlsruhe / Germany		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P14D Creating infrastructures for trading, slaughtering and chilling of slaughter animals</i>		
Description of the issue <i>in less than 5 lines</i>	In many developing countries, infrastructures for trading, slaughtering and chilling are lacking. The lack of such infrastructures leads to a lack of transparency for the farmer & a hygienic risk for the consumer.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge X	Opportunityx	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	Interviews with and discussions with Erasmus Mundus students participating in the Food of Life Master program.		

Main response proposed to address the issue	
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X	X	Briefly mention how this may be the case external: regarding e.g. climate change internal: regarding e.g. breeding technologies, postharvest technologies, farm management, know-how/capacity building

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	x	x	X	
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1429. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point X		Systemic issue X	
1430. Breadth: Are there many people affected?	Few		Many X	
1431. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i> X <i>e.g. some local areas in Sub-</i>	National <i>Indicate here the precise country</i> X <i>e.g. most of the countries in Sub-</i>	Regional <i>Indicate here the precise region;</i> X <i>e.g. some regions in countries in</i>	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	<i>Sahara Africa</i>	<i>Sahara Africa like Kenya, Uganda, Tanzania, Ethopia</i>	<i>Sub-Sahara Africa</i>
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For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1432. Impact on Availability	X
1433. Impact on Access	X
1434. Impact on Utilization/ nutrition	X
1435. Impact on Stability	X
1436. Impact on most vulnerable people	XX (small-scale farmers / poor farmers / poor people in Africa)
1437. Impact on women	X
1438. Impact on children	X
1439. Impact on marginalized populations	X (small-scale farmers / poor farmers)
1440. Cost to address the issue	Low Middle X High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X		
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle X	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with Sustainable Development Goals (SDGs) (1 to 17)<sup>123</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

- >sustainable nutrition
- >sustainable income for small farmers
- >sustainable production of food
- > reduction of food waste

**7. The case being, linkages with any other issue**

the issue is directly linked with health issues, healthy and safe food, food security, food waste management, breeding technology, pre-harvest and post-harvest technology, transport conditions, harvest, food processing

**8. Additional Supporting Information**

*Additional information*

*Evidence*

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<sup>123</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

*References*



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for **Food Security and Nutrition**

#### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Dr. Haase, Norbert, MRI		
Do you answer on behalf of your institution, or as an individual?	on behalf X		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes X		
Country of the responding individual/institution Please mention international or regional, the case being	Max Rubner-Institut (MRI), Federal Research Institute of Nutrition and Food, Karlsruhe / Germany		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P14E Minor amounts of antibiotic residues may induce resistant bacteria</i>		
Description of the issue <i>in less than 5 lines</i>			
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge X	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	Set up methodology for Monitoring samples,		

Main response proposed to address the issue	
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X	X	Briefly mention how this may be the case external: regarding e.g. fertilizer used internal: regarding e.g. location in cereal kernels, postharvest technologies, farm management, know-how/capacity building

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X		X	X	X scientific aspect;
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1441. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point X		Systemic issue X	
1442. Breadth: Are there many people affected?	Few		Many X	
1443. Scale: local/national/regional/global?	Local	National	Regional	global X
	Indicate here the precise location X	Indicate here the precise country X	Indicate here the precise region; X	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1444. Impact on Availability	++		
1445. Impact on Access	+		
1446. Impact on Utilization/ nutrition	++		
1447. Impact on Stability	0		
1448. Impact on most vulnerable people	++		
1449. Impact on women	++		
1450. Impact on children	++		
1451. Impact on marginalized populations	+		
1452. Cost to address the issue	Low	Middle X	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low X	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with Sustainable Development Goals (SDGs) (1 to 17)<sup>124</sup>

<sup>124</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
>reduction of infection with resistant bacteria  
>sustainable nutrition

**7. The case being, linkages with any other issue**

the issue is directly linked with health issues, healthy and safe food, food security, pre-harvest and post-harvest technology, food processing

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for **Food Security and Nutrition**

#### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Dr. Haase, Norbert, MRI		
Do you answer on behalf of your institution, or as an individual?	on behalf X		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes X		
Country of the responding individual/institution Please mention international or regional, the case being	Max Rubner-Institut (MRI), Federal Research Institute of Nutrition and Food, Karlsruhe / Germany		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P14F Plant toxins (e.g. Tropane alkaloids) in the food chain</i>		
Description of the issue <i>in less than 5 lines</i>	Diverse plant toxins in the food chain can have an impact on food safety and security		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge X	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>			

Main response proposed to address the issue	
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X	X	Briefly mention how this may be the case external: regarding e.g. climate change internal: regarding e.g., postharvest cleaning technologies, farm management, know-how/capacity building

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X			X	X scientific aspect; aspect of capacity building, know-how, technological development
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1453. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point X		Systemic issue X	
1454. Breadth: Are there many people affected?	Few		Many X	
1455. Scale: local/national/regional/global?	Local	National	Regional	Global X

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	Indicate here the precise location X e.g. some local areas	Indicate here the precise country X e.g. Hungary, Bulgaria etc.	Indicate here the precise region; X e.g. regions with extensive farming in south of Europe
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For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1456. Impact on Availability	-
1457. Impact on Access	-
1458. Impact on Utilization/ nutrition	XX
1459. Impact on Stability	0
1460. Impact on most vulnerable people	X
1461. Impact on women	X
1462. Impact on children	XX
1463. Impact on marginalized populations	X
1464. Cost to address the issue	Low Middle X High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle X	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with Sustainable Development Goals (SDGs) (1 to 17)<sup>125</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

>sustainable nutrition

>sustainable production of food

>reduction of plant toxins in the food chain would reduce destruction of crops and food waste

**7. The case being, linkages with any other issue**

the issue is directly linked with health issues, healthy and safe food, food security, food waste management, pre-harvest and post-harvest technology, cleaning, storage & transport conditions, harvest, food processing

**8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>125</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for **Food Security and Nutrition**

#### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Greiner, Ralf, Max Rubner-Institut, Food Technology and Bioprocess Engineering		
Do you answer on behalf of your institution, or as an individual?	on behalf X		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes X		
Country of the responding individual/institution Please mention international or regional, the case being	Germany; national		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P14G Improvement of Mineral Bioavailability from plant-based Foods</i>		
Description of the issue <i>in less than 5 lines</i>	Compared to animal-derived foods, bioavailability of minerals such as iron and zinc are significantly lower. Thus, especially children in rural areas of developing countries are running into mineral deficiencies.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge X	Opportunity X	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Issue has been identified by studying scientific literature, WHO / FAO reports, governmental reports		
Main response proposed to address the issue	Development of strategies to improve mineral bioavailability from plant-based foods, such as optimization of food processing in order to reduce antinutritional factors, crops with a higher mineral content etc.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

Researchers, nutritionists, plant breeders, food processors,

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	Efficient use of resources	X Efficiency of food and feed quality, use, production, packaging	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue		X			
Nature of the main impact of the issue on FSN		Reduction in mineral deficiencies			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1465. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point X		Systemic issue X	
1466. Breadth: Are there many people affected?	Few		Many X	
1467. Scale: local/national/regional/global?	Local	National	Regional	Global X
	Indicate here the precise location X e.g. some local areas	Indicate here the precise country X e.g. most of the countries	Indicate here the precise region; X e.g. some regions in	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1468. Impact on Availability	0 (availability of food by higher agric.production, less waste, etc.)			

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1469. Impact on Access	+		
1470. Impact on Utilization/ nutrition	+		
1471. Impact on Stability	0 ( <i>stability of food and feed?</i> )		
1472. Impact on most vulnerable people	+ ( <i>e.g. food fortification /malnutrition</i> )		
1473. Impact on women	+ ( <i>but not only</i> )		
1474. Impact on children	+ ( <i>but not only</i> )		
1475. Impact on marginalized populations	+ ( <i>but not only</i> )		
1476. Cost to address the issue	Low	Middle +	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

*Most vulnerable population are those of developing countries with a high need of minerals such as children and women in the child-bearing age*

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

*There are already strategies available. However those strategies need to be transferred into application such as enzyme application in food processing*

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle X	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with Sustainable Development Goals (SDGs) (1 to 17)<sup>126</sup>

<sup>126</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 2: “End hunger, achieve food security and improved nutrition and promote sustainable agriculture”

**7. The case being, linkages with any other issue**

The issue is directly linked with health issues, healthy and safe food, food security, nutrition, plant breeding, food processing

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for **Food Security and Nutrition**

#### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Greiner, Ralf, Max Rubner-Institut, Food Technology and Bioprocess Engineering		
Do you answer on behalf of your institution, or as an individual?	on behalf X		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes X		
Country of the responding individual/institution Please mention international or regional, the case being	Germany; national		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P14H Nanotechnology in food and agriculture</i>		
Description of the issue <i>in less than 5 lines</i>	Opportunities of nanotechnology are to improve food quality (enhancing shelf life, improving nutritional quality), production, packaging and analysis. In agriculture, focus is on improved water treatment, effective use of pesticides and fertilizers, supplements for animal food. Challenges are safety aspects of the technology and consumer perception.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge X	Opportunity X	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Issue has been identified by studying scientific literature, market reports, governmental reports		
Main response proposed to address the issue	To establish an internationally accepted definition of nanomaterials. Based hereon research and development of methods for the detection and characterization of nanoparticles and/or nanostructures, which could alter the nutritional value or quality if added in the course of food production.		



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

Main actor(s) concerned or involved in the response proposed

Firstly governmental bodies \*) worldwide, then researchers in the field of food development and process engineering.

\*) Amenta V et al.: Regulatory aspects of nanotechnology in the agri/feed/food sector in EU and non-EU countries. Regulatory Toxicology and Pharmacology 73 (2015) 1, 463–476

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X Efficient use of resources	X Efficiency of food and feed quality, use, production, packaging	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X		X	X	
Nature of the main impact of the issue on FSN			Sustainable use of resources	Need of regulation	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1477. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point X		Systemic issue X	
1478. Breadth: Are there many people affected?	Few		Many X	
1479. Scale: local/national/regional/global?	Local	National	Regional	Global X
	Indicate here the precise location X e.g. some local areas	Indicate here the precise country X e.g. most of the countries	Indicate here the precise region; X e.g. some regions in	
For items 4-11 below, please use the classification [ — — , — , 0 , + , ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1480. Impact on Availability	+ (availability of food by higher agric.production, less waste, etc.)			

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

1481. Impact on Access	-		
1482. Impact on Utilization/ nutrition	+		
1483. Impact on Stability	+ ( <i>stability of food and feed?</i> )		
1484. Impact on most vulnerable people	+ ( <i>e.g. food fortification /malnutrition</i> )		
1485. Impact on women	+ ( <i>but not only</i> )		
1486. Impact on children	+ ( <i>but not only</i> )		
1487. Impact on marginalized populations	+ ( <i>but not only</i> )		
1488. Cost to address the issue	Low	Middle	High ++

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

*ad 12: ++ means: costs to address the issue are expected to be high.*

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

*Up to now and in the future*

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle X	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with Sustainable Development Goals (SDGs) (1 to 17)<sup>127</sup>

<sup>127</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 2: "End hunger, achieve food security and improved nutrition and promote sustainable agriculture"

SDG 12: "Ensure sustainable consumption and production patterns"

#### **7. The case being, linkages with any other issue**

The issue is directly linked with health issues, healthy and safe food, food security, food waste management, breeding technology, food processing and storage

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

..have been identified in the field of nanotoxicology

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for **Food Security and Nutrition**

#### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Prof. Dr. Jan Fritsche, MRI		
Do you answer on behalf of your institution, or as an individual?	on behalf X		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes X		
Country of the responding individual/institution Please mention international or regional, the case being	Max Rubner-Institut (MRI), Federal Research Institute of Nutrition and Food, Kiel / Germany		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	P14I Ciguatoxins (CTX) in the fish chain		
Description of the issue <i>in less than 5 lines</i>			
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge X	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	Literature search (e.g. WHO/FAO reports)		

Main response proposed to address the issue	Global knowledge accumulation, impact assessment, forecast modeling studies. Detection and mitigation strategies.
Main actor(s) concerned or involved in the response proposed	Managing Ciguatera fish poisoning requires broad partnerships among international experts on fisheries, public health, researchers, and climate change. Link up also with CODEX Committee on Fish and Fishery Products (food safety issues, traceability, early warning systems).

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X		Briefly mention how this may be the case external: regarding e.g. climate change internal: regarding e.g. breeding technologies, postharvest technologies, farm management, know-how/capacity building

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X		X	X	X scientific aspect; aspect of capacity building, know-how, technological development
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1489. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point X		Systemic issue	
1490. Breadth: Are there many people affected?	Few X		Many	
1491. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i> X <i>e.g. some local areas in Sub-Saharan Africa</i>	National <i>Indicate here the precise country</i> X <i>e.g. most of the countries in Sub-Saharan Africa like Kenya, Uganda, Tanzania</i>	Regional <i>Indicate here the precise region;</i> X <i>e.g. some regions in countries in Sub-Saharan Africa</i>	Global X

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		<i>mycotoxin /aflatoxin problems will emerge more and more on other continents like in Europe, due to climate change and other issues</i>	
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For items 4-11 below, please use the classification [ — —, —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1492. Impact on Availability	0
1493. Impact on Access	0
1494. Impact on Utilization/ nutrition	--
1495. Impact on Stability	0
1496. Impact on most vulnerable people	--
1497. Impact on women	--
1498. Impact on children	--
1499. Impact on marginalized populations	-- (small-scale farmers / poor farmers)
1500. Cost to address the issue	Low Middle X High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X		
Moment to act to address the issue		X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High X
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**6. Linkages with Sustainable Development Goals (SDGs) (1 to 17)<sup>128</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

>good health and well-being (SDG 3)

>climate action (SDG 13)

>life below water (SDG 14)

**7. The case being, linkages with any other issue**

the issue is directly linked with health issues, healthy and safe food, food security.

**8. Additional Supporting Information**

*Additional information*

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<sup>128</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Evidence*

*Knowledge gaps*

*References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Tammi Jonas, President, Australian Food Sovereignty Alliance (AFSA)		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Australia		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P15A Barriers to regional food planning for resilient diversity</i>		
Description of the issue <i>in less than 5 lines</i>	Australian farmers and food producers, and the local economies they underpin, are extremely vulnerable to impacts of a corporatised food system supported by government regulatory action that is not sensitive to scale and disproportionately constrains and disadvantages local, ethical and ecologically sound food production.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>			Both
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	AFSA is working directly with producers, community food organisations, retailers, local government and scholars to establish case studies and baseline and ongoing measures to better understand how inappropriate-to-scale regulations are constraining the ethical and ecologically sound production of food; community concerns about regional diversity and its link to resilience in food systems; and the infrastructure needs in specific sites/regions.		

Main response proposed to address the issue	The development of regional food hubs and/or incubators as a social and economic development strategy with particular benefits for local food producers, as well as citizens, including vulnerable and low-income communities. Co-locating hubs and incubators would allow opportunities to connect the new businesses with local food producers and the community-at-large.
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Main actor(s) concerned or involved in the response proposed	Local retailers, regional farmers, eaters, public health officials, local councils and community organisations.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	*	*	The food hub/incubator model is a social and economic development strategy with particular benefits for local producers, local businesses and consumers, including vulnerable and low-income communities. It is about access within food systems (internal) and constraints from without (external).

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	*	*	*	*	Health
Nature of the main impact of the issue on FSN	*	*	*	*	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

Australian producers operate in an unjust regulatory environment in the most concentrated grocery retail market in the world. The 'ever-lower price' philosophies of dominant retailers pose direct threats to producer livelihoods and to community identity and pride in local food traditions based on productive natural environments, as well as to public health through the promotion of ultra-processed foods.

## 3. Attributes of the Issue

Classification (**)
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1501. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				<b>Systemic issue</b>
1502. Breadth: Are there many people affected?				<b>Many</b>
1503. Scale: local/national/regional/global?			<b>Regional</b>	
		<i>Australia</i>	<i>All states and territories</i>	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1504. Impact on Availability	— —			
1505. Impact on Access	— —			
1506. Impact on Utilization/ nutrition	— —			
1507. Impact on Stability	— —			
1508. Impact on most vulnerable people	Low socio-economic; those with unhealthy diets. Local producers and businesses			
1509. Impact on women	— —			
1510. Impact on children	— —			
1511. Impact on marginalized populations	— —			
1512. Cost to address the issue			<b>Middle</b>	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

Despite apparent growing prosperity, poverty and disadvantage remain features of Australian life, concentrated, in particular, in rural and urban communities with lower socio-economic status. Even in Sydney, Australia's most populous and wealthiest city, eight per cent of the population report that they have experienced food insecurity. This is exacerbated in rural areas where regional diversity is threatened by the dominance of two major retailers who engage in price fixing and anti-competitive behavior, and promote cheap, unhealthy foods.

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	*	*	*
Moment to act to address the issue	*	*	*

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

The food hub and incubator model presents an intervention that provides long-term, sustainable employment opportunities for vulnerable and low-income residents, with job creation and up-skilling seen as food security interventions; connects local producers, manufacturers, and retailers, facilitating the growth of local food economies; preserves existing and supports new opportunities for local and regional urban and rural agriculture; and supports local and regional food value chains and related infrastructure involved in the processing, packaging, and distribution of food. This can ensure short-term improvement in local economies and public diets, and provide a foundation for long-term resilience in terms of regional, and national, food security.

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## 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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Based on the success of international and national examples, AFSA is confident that food hubs can thrive in most regions of Australia. A number of existing food hubs, including CERES in Melbourne, the South East Food Hub and Food Connect in Brisbane, are demonstrating that this form of social enterprise provides a better return to farmers, improves access to healthy food for communities, creates jobs, and builds skills. These hubs have not yet expanded to include a community space, but this is planned for a Food Hub / Community Food Centre hybrid in Bendigo. Many areas have existing infrastructure that might be adapted to food hubs and incubators.

## 6. Linkages with SDGs (1 to 17)<sup>129</sup>

Sustainable Development Goal (SDG) 2: *To end hunger, achieve food security and improved nutrition and promote sustainable agriculture.* Our approach recognises the links and dependencies between the challenges local producers and retailers face in developing diverse and resilient regional food systems and those faced in ensuring that all people, and especially vulnerable populations, have access to fresh, healthy, affordable and culturally appropriate food produced in ecologically sound and ethical ways.

<sup>129</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## 7. The case being, linkages with any other issue

Our approach engages with the following critical and emerging issues identified by the HLPE:

1. Healthy nutrition in changing food systems
2. Livestock systems and food security and nutrition: challenges and opportunities
3. Inequalities and food security and nutrition: the imperative of addressing the needs of disadvantages and vulnerable populations
4. Pathways to sustainable food systems: the pursuit of human and environmental health for all.

## 8. Additional Supporting Information

### *Additional*

### *information*

Internationally, approaches to Food Hubs vary, underlining the range of options that can be utilised in order to achieve outcomes that are both desirable and sustainable, including ensuring lower income communities have access to high quality fresh food, whilst also building community.

While best practice will further examine the specific vulnerabilities and needs among residents before proceeding, a food hub could include a range of basic services:

- Emergency food scheme/food bank
- A food box/Community Supported Agriculture (CSA) program
- Farmers market to directly link regional growers with city residents
- Classrooms for nutrition and education classes, as well as business training
- A commercial kitchen, for use by community members in a business incubator program to support new value-added food entrepreneurship

### *Evidence*

From producers to retailers, chefs, emergency food providers and community members, experience in North America and elsewhere demonstrates that food hubs and incubators offer a way to involve everyone who grows, eats, cooks and shares food in an integrated approach that achieves multiple and long-lasting benefits:

- Increased access to and affordability of healthy, fresh and local produce for vulnerable and low-income residents
- Significantly better returns to local producers
- Marketing, storage and distribution solutions for local producers and food businesses
- Significant efficiency savings and distribution solutions for restaurants and other businesses wanting to access local produce
- Training and employment opportunities for local residents
- Business incubation opportunities for new entrepreneurs

A Report on the different food business incubator models is available here [http://www.econsultsolutions.com/wp-content/uploads/2013/08/ESI-SharedKitchenReport\\_2013.pdf](http://www.econsultsolutions.com/wp-content/uploads/2013/08/ESI-SharedKitchenReport_2013.pdf)

### *Knowledge gaps*

There is a need to develop better understanding of 1) the complexity of the citizen experience of access to local, healthy and ethically produced food on a regional basis and 2) the barriers to, and enablers of, ethical and ecologically local production in specific sites. This can enable those engaged in the development of food hubs and incubators to more effectively understand the complex ways in which citizens experience both vulnerability and food security, and design responses that are region-specific. There is a need to identify the key metrics for success of a hub / incubator in the Australian context, and understand how these can be measured in a meaningful way.

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*References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Andy Booth, SINTEF		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Norway		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P16A The impact of plastic litter in the marine environment on marine food resources and species</i>		
Description of the issue <i>in less than 5 lines</i>	Ingestion of plastic particles by marine organisms has the potential to cause effects on growth, development and reproduction. This has implications food the security and safety of marine species used for human consumption.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	Recent research has indicated many marine organisms, including those used as food species for humans, ingest plastic particles (PPs). Negative effects of PP ingestion have been reported for a small number of marine organisms, impacting growth, development, reproduction and energy budgets. Studies are starting to indicate that PP exposure, ingestion and effects are dependent upon species type and the life stage of an organism.		

Main response proposed to address the issue	The response needs to focus both on human food species and the organisms which act as their food source. The ingestion of PPs by seafood species and the subsequent impacts need to be understood. This needs to focus on which species are most at risk and which are most severely affected. Mechanisms of toxicity require elucidation, including the relative importance of PP in hindering function of the digestive system and the impact of replacing normal food items with PPs on organism energy budget and performance (growth, development and reproduction). It is also important to consider PP exposure at different life stages of an organisms, especially those which are small in early stages of development.
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	<p>The potential for accumulation of PPs by different organisms needs to be determined and whether PPs can be internalised following exposure through ingestion. Linked closely to accumulation is the need to understand the potential for PPs to be transferred between species and trophic levels.</p> <p>The role of PP ingestion and accumulation on the health of marine organisms must be understood in order to assess implications on the quality of seafood. Impacts on organism development, reproduction and energy budgets are important to understand as these will have direct consequences on both food security and food safety.</p> <p>The role of additive chemicals present in PPs should also be more thoroughly understood. Most PP materials contain some form of additives to give them specific physical or chemical properties. Little is known about the release of these chemicals from PPs, or their bioavailability and impacts on marine organisms.</p> <p>Finally, the role of PPs as vectors for long-range transport of microorganisms, viruses and invasive species requires a more detailed assessment. At present the process is poorly understood, but may have potentially serious implications. The relevance of this transport route compared to natural transport of such organisms requires some level of evaluation in order to determine its importance.</p> <p>Research needs to focus on assessing a range of different PP types, but also the use of representative test materials rather than the pristine test materials that are commonly used in current research activities. Furthermore, research should consider both primary and secondary PPs, with the later considered to represent a higher environmental load than the former.</p> <p>In coastal areas where there are already high environmental loads of conventional/common metal and organic pollutants, their interaction with PPs needs further study to elucidate whether PPs concentrate such pollutants and act as an exposure hotspot for the transfer of such pollutants to marine organisms.</p>
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Main actor(s) concerned or involved in the response proposed

Fisheries and aquaculture  
Environmental scientists  
Ecotoxicologists (marine specialists)  
Specialists in plastics characterisation  
Regulatory authorities  
National governments  
European Union

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X			
Nature of the main impact of the issue on FSN			X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The main nature of the issue is driven by current economic and social views towards plastic use. The high volumes and 'disposable' nature of plastic consumer goods is beginning to have significant impacts on the health of the marine environment.

## 3. Attributes of the Issue

	Classification (**)			
1513. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
1514. Breadth: Are there many people affected?				Many
1515. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1516. Impact on Availability	-			
1517. Impact on Access	0			
1518. Impact on Utilization/ nutrition	-			

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1519. Impact on Stability	-		
1520. Impact on most vulnerable people	- The highest plastic concentrations in the marine environment are found in coastal areas of developing countries where food security is already a risk		
1521. Impact on women	- This issue does not have specific impacts only on women, it is general to both sexes		
1522. Impact on children	- This issue does not have specific impacts only on children, it is general to all ages		
1523. Impact on marginalized populations	0		
1524. Cost to address the issue		Middle	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

This issue will impact most of the population who regularly include seafood as part of their diet. The issue is not specific to individual sexes or age groups. There is potential for those people who live in the most polluted areas of the world (typically developing nations) to be impacted more heavily.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			X (but unknown in reality)
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

We are continuing to releasing increasing amounts of plastic waste into the marine environment. As it does not degrade quickly, the concentrations will continue to build up with estimates that plastic waste will outweigh the mass of commercially relevant global fish stocks in the oceans within the next 50 years.

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The research field is relatively young, but there is an increasing body of high quality studies that are beginning to appear that show this issue is growing in scale and importance. The research does require improved standardisation and focus to ensure meaning data is generated for future use.

## **6. Linkages with SDGs (1 to 17)<sup>130</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

The most relevant SDG is number 14: *Conserve and sustainably use the oceans, seas and marine resources*.

However, this issue is closely related to a number of other SDGs as described below:

SDG 2: *End hunger, achieve food security and improved nutrition and promote sustainable agriculture*. The issue relates to achieving food security and improved nutrition.

SDG 9: *Build resilient infrastructure, promote sustainable industrialization and foster innovation*. The issue relates to promoting sustainable and environmentally sound industrialization through a focus on global usage of plastic.

SDG 11: *Make cities inclusive, safe, resilient and sustainable*. The issue relates to maintaining cities in a way that continues to create jobs and prosperity while not straining land and resources. In particular, improving resource use and reducing pollution (plastic specifically in this case).

SDG 12: *Ensure sustainable consumption and production patterns*. The issue relates to the sustainable consumption and production of plastics and the goal of reducing future economic, environmental and social costs. In particular, it is relevant within the context of engaging consumers through awareness-raising and education on sustainable consumption and lifestyles, providing consumers with adequate information through standards and labels and engaging in sustainable public procurement.

## **7. The case being, linkages with any other issue**

The current issue of plastic litter in the marine environment is closely link to existing issues focused on marine food security and safety. The issue forms part of the large number of environmental and societal pressures currently facing the seafood industry.

## **8. Additional Supporting Information**

<sup>130</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

### Additional information

### Evidence

Please refer to the literature provide in the reference list below

### Knowledge gaps

The main knowledge gaps are described in Section 1 above, these are briefly summarised here:

- Effects on the growth, development and reproduction of marine organisms resulting from ingestion of plastic particles (PP) by marine organisms.
- Impact of PP in organisms energy budgets has not been evaluated in any detail.
- The implications of PP exposure and ingestion on food the security and safety of marine species used for human consumption.
- Negative effects of PP ingestion reported for a small number of marine organisms, have yet to be evaluated across a broader group of species, especially those important for human consumption.
- The role of species type and the life stage of an organism on both the ingestion and subsequent impacts of PP ingestion and exposure.
- Whether PPs can be internalised (e.g. to organs and tissues) following exposure through ingestion.
- The potential for PPs to be transferred between species and trophic levels.
- The release, bioavailability and effects of additive chemicals present in PPs towards marine organisms.
- The role of PPs as vectors for long-range transport of microorganisms, viruses and invasive species.
- Studies which have utilised representative PP test materials rather than the pristine test materials that are commonly used in current research activities.
- The interaction of common metal and organic pollutants with PPs.

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Jane Sherman, external nutrition education expert, Melissa Vargas Araya, nutrition education consultant FAO, Deirdre McMahon, ex nutrition consultant FAO and nutrition advisor, SNV, Amelie Baillargeon, nutrition consultant FAO	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individuals ✓
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes ✓	No
Country of the responding individual/institution Please mention international or regional, the case being	International	

#### Acronyms

CF	Complementary feeding
Consumers (here)	Those who consume food, not only those who buy food in retail outlets
EBF	Exclusive breastfeeding
FNEBC	Food and nutrition education and other behavior change strategies <sup>131</sup>
IYCF	Infant and young child feeding
NCD	Non-communicable diseases
OVCs	Orphans and vulnerable children
Public/consumer education	See footnote 1 examples in brackets

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P17A People's capacity to make good use of available resources and the food environment (which is directly influenced by the food system) to improve own diet, food practices and food and nutrition security in the long term.</i>
Description of the issue <i>in less than 5 lines</i>	Most food security actions focus on the supply side, but (a) their effects are not always optimized because of lack of knowledge, practices, perceptions and social consensus among consumers and other food system actors (Lobstein, 2014); (b) strategies and expertise to build consumer capacity are lacking.

<sup>131</sup> FNEBC is a group of evidence-based approaches which aim to identify existing behavioral influences, motivations and challenges, and to design and implement programs which go beyond information dissemination and messages to build demonstrable long-term improvements in food practices, attitudes and capacity for change. FNEBC can stand alone (as in school education, IYCF, workplace health promotion, and public education such as fruit and vegetable campaigns and national food guidelines) or can be tailored to support activities in health, agriculture and food systems and in social protection schemes (including school feeding).



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<p>Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box</p>	<p>Challenge</p>	<p>Opportunity</p>	<p>It depends ✓ Both. There are <u>opportunities</u> to accelerate nutrition gains by (a) empowering, motivating and enabling consumers to build healthier diets; (b) shaping demand to <b>complement</b> supply side strategies (i.e. greater availability of healthy diverse foods responds to demand for better diets); (c) mitigating impact of negative influences such as misleading food advertising and increased availability, affordability and accessibility of highly processed foods that are linked to overweight, obesity and associated NCDs. The <u>challenges</u> are (a) that changing practices and outlooks requires considerable attention and expertise; (b) that the transformative effect of FNEBC is not fully recognized/ exploited by policy makers, planners and programmers, and (c) that the food systems and hence the food environment will continue to change (due to external drivers such as urbanization, climate change and food price volatility), making the actors, particularly consumers' <i>capacity for change</i> essential.</p>
<p>Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition</p> <p><i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i></p>	<p>The need for FNEBC and its effective implementation can be identified in the literature, focusing on (a) its demonstrable impact on food practices; (b) differential impact of nutrition-focused interventions ± FNEBC; (c) imbalances between promoting supply and promoting demand (funding, activities, key strategy documents); (d) prevalence of ineffective FNEBC, and the belief that food behavior can be changed solely by disseminating information; (e) absent/ineffective professional training at all service levels (f) growing international recognition of the value of FNEBC.</p>		
<p>Main response proposed to address the issue</p>	<p>The main responses proposed are (a) <b>FNEBC to complement supply side measures and policies</b> for better food systems and healthier diets and/or standalone when relevant; (b) FNEBC capacity development in all relevant government services and professional cadres; (c) advocacy to include FNEBC in food and nutrition-oriented and other related activities (e.g. WASH) in all relevant</p>		

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	sectors.
Main actor(s) concerned or involved in the response proposed	<p>The main actors are:</p> <p>(a) The consumers/citizens who lead market demand and play a major role in their own health development.</p> <p>(b) The health, community development, education and food security professionals whose expertise will assist and maintain the change process.</p> <p>(c) Other food system actors, including the private sector, who play a critical role in shaping the food environment.</p> <p>(d) National and international professionals and their institutions, aid agencies and academia, who need to advocate for FNEBC, design it into interventions, and support it with research studies and hence strengthen the evidence base.</p> <p>(e) Government, who can take the lead in including FNEBC objectives and funding in national food security and nutrition plans and programs, and in promoting and institutionalizing capacity development.</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		✓	

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue		✓	Secondary	✓	Educational & behavioral
Nature of the main impact of the issue on FSN	✓	✓	✓	✓	Health

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

Changes in consumer behavior can (a) make healthy diets the social norm, increase household and institutional food quality and stability, and build adaptability to changes in food supply; (b) lead to a more productive workforce; (c) reduce health care costs; (d) increase market demand for diversity, and (e) promote environmentally sustainable food consumption patterns. Citizen food education is directly related to the Right to Food, with institutional implications for school and public health education, health and agriculture service delivery, access to dietary and product information, controls on food advertising, and FNEBC staffing and training in all relevant sectors.

## 3. Attributes of the Issue

	Classification (**)	
1525. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point	Systemic issue Affects the whole system ✓

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1526. Breadth: Are there many people affected?	Few		Many ✓	
1527. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global ✓
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1528. Impact on Availability	0			
1529. Impact on Access	+			
1530. Impact on Utilization/ nutrition	++			
1531. Impact on Stability	+			
1532. Impact on most vulnerable people	++ greatest effects on the poor, pregnant and lactating women, children 0-5 years, OVCs and elderly people (Roy et al, 2005; Bhutta et al, 2008; Ritchie et al, 2010; Imdad et al, 2011; Young et al, 2011; Lassi et al, 2013; Van Den Bold et al 2013;).			
1533. Impact on women	++ see 8			
1534. Impact on children	++ see 8			
1535. Impact on marginalized populations	++ if targeted appropriately: ethnic minorities, refugees, immigrants (Salehi et al, 2004; Alsamman, 2013; UNHCR, 2015)			
1536. Cost to address the issue	Low	Middle ✓	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

Impact on availability and access can be mediated by shaping market demand for nutritious crops and products and through home production. FNEBC enables people to seek alternative nutrient-dense food to adapt to seasonal changes, preserve foods to make up for shortages, and grow their own foods in home gardens, thus impacting stability (Talukder, et al, 2010; Achor, 2014).

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	✓	✓	✓
Moment to act to address the issue	Now		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

Short-term actions (e.g. EBF & CF) can have rapid effects on food practices and nutrition status, but need long-term impact assessment. Reversing stunting may require long-term, large-scale multicomponent interventions (CARE, 2015; Herforth & Ballard, 2016), while ongoing institutional programs combined with environmental change are needed to build consumer capacity and healthy lifestyle as social norms.

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## 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle ✓	High
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Well-designed FNEBC in IYCF, social protection and home gardening have demonstrated high impact on food practices and nutrition status, including at scale. Nutrition impact from FNEBC in commercial agriculture is less well-established; results in school and public education are variable. Longitudinal studies and more evaluation are needed. (see Box 8 below).

## 6. Linkages with SDGs (1 to 17)<sup>132</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

*SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture*

Addressing capacity through FNEBC will help to build people's knowledge, skills and motivation to establish and maintain healthy food habits and practices; to make good use of their available resources for improving diets; to adapt consumption patterns to changes in the food environment; and even to be proactive in improving the food environment themselves, for example by creating consumer demand. At the same time FNEBC can contribute to food security directly by extending dietary diversity throughout the year, and indirectly by enhancing the ability to plan for and afford healthier food over a regular period of time and by developing other food resource management skills in the household (Farrell, 2013; EFNEP).

*SDG 3: Ensure healthy lives and promote well-being for all at all ages*

"Malnutrition and diet are the biggest risk factors for the global burden of diseases" (Global Nutrition Report 2016). Hence people's desire and capacity to improve their diets and to care for and feed their children better, especially in the periods of pregnancy, the first 1000 days, and the school years, are critical to SDG3, particularly for targets 3.2 and 3.4 relating to under-5 mortality and non-communicable disease prevention (see evidence in Box 8).

*SDG1: End poverty in all its forms*

The impact of poor diets and nutrition on economic growth and progress has been widely documented (GLOPAN, 2016). Negative effects result directly from losses in physical productivity and indirectly from lost learning and cognitive potential and health care costs associated to all forms of malnutrition and non-communicable diseases (World Bank, 2006; Webb, 2015).

Conversely, better diets and food-related practices throughout the lifecycle can positively influence learning potential and productivity and thus income generating potential. A report from the ILO, for example, has therefore recommended investing in FNEBC initiatives in the workplace, together with adequate and nutritious food provision, as a means to reduce individual and workplace health-related costs and to improve wellness and productivity (Wanjek, 2005).

*Other SDGs* to which FNEBC can contribute are 4 (Quality education) and 12 (Responsible consumption and production).

<sup>132</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## 7. The case being, linkages with any other issue

The issue relates particularly to “healthy nutrition in changing food systems” already raised in the 2014 HLPE report of critical and emerging issues for food security and nutrition.

Other issues relate to policy and governance:

- *Strategic national planning for nutrition* In deploying resources to tackle national nutrition issues, governments can choose from a range of strategies (e.g. food production, food safety regulation, crop diversity, food supplementation, food fortification, biofortification, subsidies, taxes, social protection (including school feeding), public education, school education, food labeling). Many times, there is little guidance on the criteria for making up the appropriate package (e.g. resilience and adaptability, cost-effectiveness, broad/narrow spectrum, environmental sustainability, sustainability of adopted practices, women’s empowerment) and the necessary data are often lacking. This is especially true for FNEBC, whose role, functions and quality need to be articulated at policy level and built into sector plans in all relevant sectors.
- *Responsibility and accountability* for nutrition education, as well as for nutrition planning and implementation across government sectors and programs, needs to be specified, and good working models should be showcased.

## 8. Additional Supporting Information

### Re Question 1, Methodology and approach

The issues are the need for FNEBC, the need to recognize its value, and the need to implement it effectively. These needs can be identified in literature reviews, impact evaluations, research studies, capacity and training needs analyses, school curricula, comments in international publications, health and economic statistics and professional consultations. Examples of evidential support for the areas mentioned are given below.

#### Evidence

Some evidence of the **impact of FNEBC** and **the need for it**, and for its **effective implementation**:

1. FNEBC interventions that aim at promoting optimal breastfeeding and complementary feeding have a high potential to improve nutritional status of children 0-2 years, especially when combined with enhanced availability and access to adequate, safe and nutritious (local) foods (Roy et al, 2005; Bhutta et al, 2008; Imdad et al, 2011; Lassi et al 2013; USAID 2014; FAO 2016; Rollins et al. 2016; Alive and Thrive nd).
2. In relation to obesity and NCD prevention, reviews (e.g. Guerra et al. 2015) have begun to identify the secrets of success in impacting consumption practices and BMI. Many international bodies have advocated for national, multi-sectoral plans to promote healthy eating habits through evidence-based education and communication, in tandem with measures to improve the food environment and access to nutritious foods, especially during childhood (WHO 2013; CELAC 2015; Hawkes et al. 2015).
3. Complementary FNEBC in horticulture and social protection can have demonstrable impact on food practices, with large differential impacts with/without FNEBC (e.g. Akhter et al. 2016, social protection; Olney et al. 2016, home gardens)
4. Nevertheless, there remain striking imbalances between promoting supply and promoting demand, in funding, level of activity and action recommendations by key strategy documents (e.g. GLOPAN 2016(b); Global Nutrition Report 2015; Global Nutrition Report 2016; Gillespie et al. 2016; Drake et al. 2016)
5. Ineffective nutrition education remains prevalent, in particular the belief that it is enough to disseminate information: see e.g. Keller & Lang 2007 (food-based dietary guidelines); Kanani 2008 (IEC)). One reason is lack of professional training or ineffective training: see FAO 2011

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- (FNEBC capacity analysis in Africa); Fanzo et al. 2013 (training of agricultural extensionists).
6. International recognition of the value and role of FNEBC is growing: see for example: Shelton 2016, (IFPRI blog); Alderman 2016 (World Bank review of social protection programs); ICN2 2014 Framework for Action (recommends all areas of FNEBC); Global Nutrition Report 2016 (for the first time mentions both FNE and BCC as strategies for nutrition); GLOPAN 2016(a) (lists FNEBC as a necessary strategy in its 10 recommendations); Lobstein 2014 (proposes amending definition of nutrition security to accommodate FNEBC).

#### *Knowledge gaps*

The SBCC nutrition report (SPRING 2014) sums up well the established knowledge, gaps and opportunities in FNEBC impact, design and implementation. It mentions for example gaps in the evidence for sustained, long-term behaviour change, for comparative cost-effectiveness of different strategies (including mass media and social media), for the effectiveness of different models of integration within existing systems, and for the skills and capacities needed in developing countries and how to develop them. Broadly, the evidence base for FNEBC in developing countries needs extending particularly for agriculture and food security interventions, public and consumer education, school education and professional training. Longitudinal studies are needed to reinforce the correlations observed in populations between food practices/health and (for example) school education and restrictions on TV food advertising for children.

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Denise Giacomini DGISAN Ministry of Health		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Italian Ministry of Health		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P18A Win-win strategy (Ministry of Health and Industry) for improving nutritional characteristics of food</i>		
Description of the issue <i>in less than 5 lines</i>	Voluntary cooperation between the food industry and the public administration on reducing sugar, saturated fat, trans fatty acids (food: baked goods, cereals, and sweets; non-alcoholic drinks; and dairy products and ice cream)		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity X	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Responsiveness on the part of the food industry – which is aware of the problem and considers itself part of the solution – is indispensable, and it includes not only an awareness of the relationship between health and various nutrients, but also the cognizance of a proper lifestyle model combining exercise and healthy nutrition, taking into account serving size and the frequency of consumption of certain types of food.		
Main response proposed to address the issue	This kind of win-win strategy will allow consumers to choose to modify their own dietary habits by selecting reformulated products, eating smaller portions		

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Main actor(s) concerned or involved in the response proposed

Industry, Public Administration and consumers

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Win-win strategy

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

With a win-win strategy to implement common approaches to promote product reformulation of foods high in energy, saturated fats, trans fatty acids, free sugars, and salt

## 3. Attributes of the Issue

	Classification (**)			
1537. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
1538. Breadth: Are there many people affected?				Many
1539. Scale: local/national/regional/global?	Local	National	Regional	X Global

For items 4-11 below, please use the classification [ — , —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1540. Impact on Availability	+
1541. Impact on Access	+
1542. Impact on Utilization/ nutrition	++
1543. Impact on Stability	+

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1544. Impact on most vulnerable people	Concerning children		
1545. Impact on women	+		
1546. Impact on children	++		
1547. Impact on marginalized populations	Specify as appropriate		
1548. Cost to address the issue	Low		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

The availability of a wide variety of reformulated and improved food products allows consumers to make easier choices that are better adapted to their lifestyles.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X		
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

The Ministry of Health has drafted the present document in collaboration with certain sectors of the food industry. The document provides an overview of the current situation, identifies the reformulation efforts carried out so far, and highlights possible opportunities and priorities for future actions.

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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[http://www.salute.gov.it/imgs/C\\_17\\_pubblicazioni\\_2426\\_ulterioriallegati\\_ulterioreallegato\\_0\\_alleg.pdf](http://www.salute.gov.it/imgs/C_17_pubblicazioni_2426_ulterioriallegati_ulterioreallegato_0_alleg.pdf)

#### 6. Linkages with SDGs (1 to 17)<sup>133</sup>

<sup>133</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
Goal 2. End hunger, achieve food security **and improved nutrition** and promote sustainable agriculture  
Goal 3. Ensure healthy lives and promote well-being for all at all ages  
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all  
Goal 12. Ensure sustainable consumption and production patterns

**7. The case being, linkages with any other issue**

This effort is part of a broader initiative to fight childhood overweight and obesity, and falls within the framework of the strategies that have been pursued in recent years, such as the Memoranda of Understanding signed between the Ministry of Health and food producers' associations to reduce salt content in products such as bread and frozen soups. In conclusion, overweight and obesity are a public health problem whose solution cannot be entrusted exclusively to the health care system: the potential recipe for success in the reformulation of food products favoured by children requires cross-cutting, multi-sector interventions, with close cooperation between health authorities and the food industry. The commitments made so far are important to achieve the goal of improving the nutritional characteristics of food products, but it is essential that the effort to study and design new formulations continue to be pursued, together with the dissemination of a culture that promotes healthy lifestyles from an early age.

**8. Additional Supporting Information***Additional information*

The Ministry of Health is doing this through the national programme “*Guadagnare salute: rendere facili le scelte salutari*” [“Gaining in health: making healthy choices easier”], whose approach to health and prevention is based on inter-sectorial strategies and supported by institutional commitment at various levels.

*Evidence*

EU's “*Action Plan on Childhood Obesity 2014-2020*” lists among its main objectives the promotion of a healthy diet as the simplest option, and encourages the reformulation of food products taking nutritional needs into account.(6)

*The Milan Charter* “is crucially important to “produce and market healthy, safe food, informing consumers about the nutritional content, environmental impact and social implications of the product”, as well as ensuring that “everyone has the right to have access to a sufficient quantity of safe, healthy and nutritious food, that satisfies life-long personal nutritional requirements and enables them to lead an active life”. (7)

*Knowledge gaps*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

[http://www.salute.gov.it/imgs/C\\_17\\_pubblicazioni\\_2426\\_ulterioriallegati\\_ulterioreallegato\\_0\\_alleg.pdf](http://www.salute.gov.it/imgs/C_17_pubblicazioni_2426_ulterioriallegati_ulterioreallegato_0_alleg.pdf)

Sources:

- (1) Global status report on non-communicable diseases 2010- World Health Organization April 2011
- (2) WHO European Childhood Obesity Surveillance Initiative: implementation of round (2007/2008) and round 2 2009/2010 WHO/Europe, 2014
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- (4) Second International Conference on Nutrition - <http://www.fao.org/about/meetings/icn2/en/>
- (5) Vienna Declaration on Nutrition and Noncommunicable Diseases in the Context of Health 2020 Vienna, Austria 4–5 July 2013
- (6) [http://ec.europa.eu/health/nutrition\\_physical\\_activity/docs/childhoodobesity\\_actionplan\\_2014\\_2020\\_en.pdf](http://ec.europa.eu/health/nutrition_physical_activity/docs/childhoodobesity_actionplan_2014_2020_en.pdf)
- (7) <http://carta.milano.it>

P19A



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Heather Mckhann, FACCE-JPI		
Do you answer on behalf of your institution, or as an individual?	On behalf of FACCE-JPI		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	International committee		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P19A Increased risks to food production and distribution due to extremes of weather and climate variability</i>		
Description of the issue <i>in less than 5 lines</i>	Climate change is occurring but unprecedented extremes of weather and increased climate variability are having larger effects on crop production and food distribution.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge X	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	FACCE JPI and two other related European Joint Programme initiatives (Oceans and Healthy Diets for Healthy Living) have held two workshops during 2016 to identify key issues affecting food and nutritional security. Based on scientific and policy intelligence, scientists and policy shapers identified climate variability as a major challenge to food security in the coming decades. It affects production (both terrestrial and aquatic systems) and distribution systems (crucially important in 'just in time' retailing).		
Main response proposed to address the issue	More collaborative research and development of remedial actions across players within food systems.		

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Main actor(s) concerned or involved in the response proposed

Research scientists, agricultural producers (farmers and associated suppliers), food processors and retailers

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: Because the issue has a broad range of impacts on several elements of the food system, its potential impact is also broad.

## 3. Attributes of the Issue

	Classification (**)			
1549. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		XSystemic issue	
1550. Breadth: Are there many people affected?	Few		XMany	
1551. Scale: local/national/regional/global?	Local	National	Regional	XGlobal
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1552. Impact on Availability	- -			
1553. Impact on Access	-			
1554. Impact on Utilization/ nutrition	0			
1555. Impact on Stability	- -			



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1556. Impact on most vulnerable people	X the poorest are most vulnerable		
1557. Impact on women	X		
1558. Impact on children	X		
1559. Impact on marginalized populations	X those without land or dependent on others for livelihoods		
1560. Cost to address the issue	Low	XMiddle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: Variation outside the normal range adversely affects the poorest because they rarely have a 'buffer' in place.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact		X	
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: The issue is already apparent but is likely to become worse in the next decade. Insurance companies are already preparing for this reality.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	XMiddle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: Because these are sporadic events, it takes time to collect data from a wide range of sources to examine incidents in multiple locations.

#### 6. Linkages with SDGs (1 to 17)<sup>134</sup>

<sup>134</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG2 (removing hunger) is the most relevant but there are also links with SDGs 3 (healthy living), 9 (resilient infrastructure), 14 (marine conservation) and 15 (reduce land degradation).

**7. The case being, linkages with any other issue****8. Additional Supporting Information***Additional information*

This topic has resonance with WMO priorities

*Evidence*

References below indicate that the risk of disruption to food systems from climatic extremes is growing. The risk of a 1 in 100 year production shock event from extreme weather could increase to 1 in 30 year in the next few decades.

*Knowledge gaps*

It is difficult to evaluate the likelihood of extreme events without access to large amounts of data. Crop model research is required to improve the representation of key physiological mechanisms and genetic variation in response to extreme growing conditions.

*References*

Extreme weather and resilience of the global food system (2015). Final Project Report from the UK-US Taskforce on Extreme Weather and Global Food System Resilience, The Global Food Security Programme, UK.

Cai, W. et al., (2014). Increasing frequency of extreme El Nino events due to greenhouse warming. Nature Climate Change 4, 111-116.

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## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Carin Smaller, International Institute for Sustainable Development		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Canada, Switzerland		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P20A Competition in global seed, fertilizer and chemical sectors.</i>		
Description of the issue <i>in less than 5 lines</i>	Recent mergers and acquisitions between major agricultural input suppliers have increased concentration and reduced competition, raising anti-trust issues, increasing farmer dependence on few suppliers who can use market prices to over charge.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Review of news sources and mergers and acquisitions announcements. Prominent examples include Bayer takeover of Monsanto, ChemChina acquisition of Syngenta, and mergers between Dow and Dupont, and between Potash and Agrium.		
Main response proposed to address the issue	Review deals in the context of anti-trust and competition laws. Further research into the implications of a more concentrated market for competition and prices paid by farmers, especially smallholders.		

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Main actor(s) concerned or involved in the response proposed

Research institutes, civil society organizations.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		Internal	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X			X	
Nature of the main impact of the issue on FSN	X			X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)
1561. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Systemic issue
1562. Breadth: Are there many people affected?	Many
1563. Scale: local/national/regional/global?	Global
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)	
1564. Impact on Availability	—
1565. Impact on Access	—
1566. Impact on Utilization/ nutrition	0
1567. Impact on Stability	—
1568. Impact on most vulnerable people	Negative impact on smallholders or marginalized

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	farmers with low bargaining power...		
1569. Impact on women	...especially women.		
1570. Impact on children	0		
1571. Impact on marginalized populations	Negative impact on smallholders or marginalized farmers with low bargaining power...		
1572. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>135</sup>

<sup>135</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 2: Zero hunger

SDG 1: No poverty

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

IISD Blog: Bayer Tightens Control Over World's Food Supply, Carin Smaller, 23 September. Available at: <https://www.iisd.org/blog/bayer-tightens-control-over-world-s-food-supply>

Carin Smaller and Sophia Murphy, *Confronting the Global Food Challenge*. Available at: [http://www.iatp.org/files/451\\_2\\_104458.pdf](http://www.iatp.org/files/451_2_104458.pdf)





## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Switzerland : Swiss National Committee for the FAO supported by the Swiss government (Swiss Agency for Development and Cooperation; Federal Office for Agriculture FOAG)	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P21A Increasing concentration in the seeds and pesticides markets</i>		
Description of the issue <i>in less than 5 lines</i>	The six same companies control 75% of the global pesticide market and 71% of the global seed market. The mega-mergers now going on will still reinforce this situation. The implications for food security and nutrition are extremely important.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the <i>appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	An economic approach was used. Concentration in the seed and pesticide markets, and linkages between the two markets, were analyzed on the basis of available industry data. The increasing concentration observed, as well as the strong interlinkages between both markets, have huge potential implications for food security, nutrition and the transition towards more sustainable agriculture and food systems (SDG2). Existing literature was then screened for evidences of actual impacts.		

Main response proposed to address the issue	<p>Preparation of a credible study on the reasons and implications for food security, nutrition and sustainable agriculture and food systems (including climate change, biodiversity) of this concentration in the seed and pesticide markets and associated recommendations on how to address this concentration at the global, national and local level.</p> <p>Awareness of the underlying drivers at the global, regional and local levels.</p> <p>Guidance and best practices on how to develop credible competition laws (including socio-economic factors) and enforce them.</p> <p>Recommendations on how governments can promote diversity in the global seed and pesticide markets, including by implementing favorable regulation and pro-competition policies, increasing public R&amp;D and support farmers' seed systems and agroecology.</p> <p>International organizations and research institutions to focus on the needs of small holder farmers.</p>
Main actor(s) concerned or involved in the response proposed	National governments, international organizations, industry/industry associations, breeders, civil society organizations and farmers

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<b>External driver</b>	<b>Internal to food systems</b>	<b>Both</b>
Is the issue either or both?		X	Briefly mention how this may be the case

(*)	<b>Economic (and productive)</b>	<b>Social (and Cultural)</b>	<b>Environmental (resources, etc.)</b>	<b>Governance (institutions, rights, etc.)</b>	<b>Other (SPECIFY)</b>

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				etc.)	
Main nature of the issue	X				
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
The issue is economic (market concentration) but has a wide range of potential impacts, including economic (prices, innovation), social (right to food), environmental (biodiversity, pesticides, transition to sustainable agriculture and food systems) and governance (concentration of power, corporate capture).

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
13. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				<b>Systemic issue</b>
14. Breadth: Are there many people affected?				<b>Many</b>
15. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	<b>Global</b>

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

16. Impact on Availability	--
17. Impact on Access	--
18. Impact on Utilization/ nutrition	-
19. Impact on Stability	0
20. Impact on most vulnerable people	--
21. Impact on women	--
22. Impact on children	-
23. Impact on marginalized populations	--
24. Cost to address the issue	<b>Middle</b>

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(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) identified the following problems arising from concentration:

- Concentration to a handful of suppliers leads to concentration in research, and the development of only a few varieties of seeds.
- Concentration impedes market entry for new companies.
- The anti-competitive effect can lead to a massive increase of seed prices. For example, prices for cotton seed have increased by three or four times since genetically modified (GM) cotton was introduced in the U.S. and there was a substantial increase in prices in developing countries as well

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Concentration within, and interlinkages between, both markets is already high now, and therefore likely to have an actual/short term impact. But both concentration and interlinkages will still increase when the mega-mergers go through, and therefore the medium and long-term impact will be higher.

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
---	--	--------	--

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

There is a good knowledge of the actual concentration and consolidation taking place in the global pesticide and seed markets. Evidences of actual impacts are

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mainly sectorial and/or local. Main potential responses measures have been quite well documented.

## **6. Linkages with SDGs (1 to 17)<sup>136</sup>**

SDG 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture

SDG 12 Ensure sustainable consumption and production patterns

SDG 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

## **7. The case being, linkages with any other issue**

Strong linkage with food security and sustainable food and agriculture systems.

## **8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>136</sup>

See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

*Knowledge gaps*

The increasing concentration in, and interlinkages between, the seed and pesticide markets are well documented, and their potential implications for food and nutrition, food security and sustainable food and agriculture systems are well-known. However there is a gap in documenting the actual effects at a global level. Governments and international organizations need guidance on how to address the issue.

*References*

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UNCTAD, [http://unctad.org/en/Docs/tdrbpconf7d3\\_en.pdf](http://unctad.org/en/Docs/tdrbpconf7d3_en.pdf), 2010  
International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), Agriculture at a Crossroads, 2008

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Switzerland : Swiss National Committee for the FAO supported by the Swiss government (Swiss Agency for Development and Cooperation; Federal Office for Agriculture FOAG)		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	Switzerland		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P21B Youth in Agriculture and Agri-Food Systems (Agripreneurship)</i>		
Description of the issue <i>in less than 5 lines</i>	The average age of farmers is increasing globally. In the USA the average age of farmers is now 58 years, in Japan it is 67 (Jöhr, 2015) and in Africa over 60. Encouraging a new generation of farmers and young people motivated to start agribusinesses is crucial for the future of food security and nutrition.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b><u>Challenge</u></b>	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	The HLPE report published in July 2016 ( <i>Sustainable agricultural development for food security and nutrition: what roles for livestock</i> ) identified as a key social challenge the issue of the ageing workforce in agriculture and the exodus of young people leading to rural abandonment. This report also highlighted the issue that older farmers are less likely to introduce new, transformative production techniques (Vos, 2015) and that feeding a growing population with an ageing workforce will require radical changes in production technology and/or the need to make farming more attractive to young people. The magnitude of the challenge, and the opportunities that can be created by addressing this issue, certainly warrant further detailed studies with the rigor that is characteristic of the HLPE.		

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Main response proposed to address the issue	<p>Young people need to be made aware of the issues both locally and globally. Youth bring energy, innovative ideas, the ability to use machinery and modern technology. They are also motivated by the desire to make money.</p> <p>However, this requires improving access to knowledge, information and education. There are numerous obstacles such as limited access to land, finance and the tools to set up new businesses. It is essential to develop Policies to support youth in agriculture and the agri-food system.</p> <p>Improving rural livelihood opportunities, through the creation of supporting businesses (input supplies, technology, local markets, storage and transportation). Other opportunities include exploring alternative value chain models and through integration with other sectors such as tourism and healthcare.</p>
Main actor(s) concerned or involved in the response proposed	<p>Young People, Farmers, Regional Organisations (e.g. African Union), National Governments, International Organisations, Universities, Private sector, Civil Society Organisations.</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			There are many external drivers that contribute, but fundamentally it is a <u>food system</u> issue.

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:



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### 3. Attributes of the Issue

	<b>Classification (**)</b>			
1573. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				Systemic issue
1574. Breadth: Are there many people affected?				Many
1575. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	Global
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1576. Impact on Availability	- (increasingly in the future as in most of the areas below)			
1577. Impact on Access	-			
1578. Impact on Utilization/ nutrition	--			
1579. Impact on Stability	--			
1580. Impact on most vulnerable people	-			
1581. Impact on women	--			
1582. Impact on children	-			
1583. Impact on marginalized populations	-			
1584. Cost to address the issue				High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	x	x
Moment to act to address the issue	x		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 5. Degree of confidence

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Solidity of currently available knowledge base.

Low

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The information available is currently scattered in the documents and web sites of a range of organisations but there is little consolidation of potential solutions

## 6. Linkages with SDGs (1 to 17)<sup>137</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

The most relevant is SG2 (Zero Hunger) but with links to SGD 1 (No Poverty), 3 (Good Health and Well-Being), 4 (Quality Education), 5 (Gender Equality), 6 (Clean Water and Sanitation), 8 (Decent Work and Economic Growth), 11 (Sustainable Cities and Communities), 12 (Responsible Consumption and Production), 13 (Climate Action), 15 (Life on Land) & 17 (Partnerships for the Goals).

## 7. The case being, linkages with any other issue

Strong link to food security and sustainable agriculture and food systems

## 8. Additional Supporting Information

### *Additional information*

Increasing the access of young people into agriculture and agri-food businesses and making it an attractive and viable long term livelihood opportunity is a potential engine of economic development and long-term accessibility to safe, quality assured, regulatory compliant and healthy agricultural materials and services.

Taking the specific example of Africa (which has the youngest population in the world) almost 200 million people are aged between 15 and 24. Estimates suggest that Africa's total labour force will be 1 billion strong by 2040, making it the largest and youngest worldwide.

Agriculture accounts for 32 per cent of Africa's gross domestic product, and employs over 65 per cent of its labor force. Research has shown that increased and sustained investments in agriculture greatly enhances productivity, reducing hunger, inequality, poverty, and food insecurity.<sup>138</sup>

<sup>137</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

<sup>138</sup> From Unleashing Africa's Agricultural Entrepreneurs: Improving the Enabling Environment for Agriculture, The Tony Elumelu Foundation, 2016

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Agriculture and agri-food can be a vibrant source of employment for young people by choice, rather than by default as it is frequently today. However, this requires a concerted effort across many actors in the public and private sectors and implementation of effective policies at the national level to tackle some of the constraints young people face in starting in agriculture and agri-businesses. These constraints include difficulties in accessing land, agricultural inputs, sources of finance as well as lack of business management and entrepreneurial skills.

#### *Evidence*

#### *Knowledge gaps*

A report issued by the Tony Elumelu Foundation, in 2016 states that “No research literature was identified that directly addressed the effects that rural young people leaving agriculture has on food and nutrition security (at individual, household, village or national levels) or livelihoods and wellbeing.”

#### *References*

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- Agriculture for Impact, Small and Growing Entrepreneurship in African Agriculture. A Montpellier Report June 2014
- G. Conway One billion hungry: Can we feed the world? 2012
- IITA 2014 Empowering Novel Agribusiness-Led Employment for Youth in African Agriculture (ENABLE Youth)
- S. Carr, A. Roulin, An exploration of Agripreneurship Scope, Actors and Prospects, June 2016

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Ali Dolloso – Occupy UN For Animals	
Do you answer on behalf of your institution, or as an individual?	On behalf	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	United Kingdom	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P22A Ancient animal processing 1. Asian tortured dog and cat meat 2. European Force Fed Ducks Foie Gras</i>		
Description of the issue <i>in less than 5 lines</i>	Ancient meat practices 1. Asian dogs and cats tortured and boiled alive – standard practice in Asia. 2. Foie Gras Pate – force fed ducks, too much food stuffed into ducks via metal pipes, backsides burst out – using Ancient Egypt Method – painful.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Photos – these show the ancient Asian live dog meat process, where the hair is taken off in a spinning machine, dogs placed in boiling water, dogs blow torched alive. Standard across Asia. Ancient Foie Gras production photos – showing tubes stuck down duck's necks, too much food spilling out and choking ducks, and photos showing backsides of ducks bursting out, bloody and painful.		
Main response proposed to address the issue	UN FAO and SDG and Civil Society and UNEP and UNESCO leads to have presentation at UN Assembly to all Member States. To present photos depicting Ancient Methods. To show photos of ancient processes, including Asian Dog Meat and Cat Meat Torture, and Ancient Egypt Foie Gras Production, including force feeding tubes tuck down throats, and backsides bursting out.		

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Main actor(s) concerned or involved in the response proposed	UNEP Director Eric Solheim UNEP Director W Asia Iyad Abumoghli UNESCO Director Irina Bokova UNFAO Director Graziano de Silva UNFAO Vietnam Jong-Ha Bae UNPGA Peter Thomson SDG Lead David Nabarro UNDESA Lenni Montiel UNDP Asia Pacific Director Haoliang Xu UNDP China – Agi Veres UNSG - <b>António</b> Guterres
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*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
25. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue
26. Breadth: Are there many people affected?	Few			Many
27. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
28. Impact on Availability				
29. Impact on Access				

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

30. Impact on Utilization/ nutrition			
31. Impact on Stability			
32. Impact on most vulnerable people	Specify as appropriate		
33. Impact on women			
34. Impact on children			
35. Impact on marginalized populations	Specify as appropriate		
36. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.			High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

No animal should be tortured or boiled alive or blow torched alive or dismembered alive for food, or culture. No animal should be force fed alive, for cultural pate. This is not sustainable agriculture.

- 12. Linkages with SDGs (1 to 17) Goal 2, Food – sustainable agriculture – UN places huge importance on Animal Welfare. Goal 3 – hurting animals this way, is not good for the mental health of the workers. It is not good for the mental health of consumers to hold beliefs about eating tortured dogs and cats, it is not good for the mental health of children who see dogs and cats boiled alive in Asian markets. Goal 12, responsible production and consumption – using torturous ancient methods on a live animal, boiling alive, or force feeding is not responsible. Goal 15 life on land UN doc Transforming our Planet states all animals no matter how small value, need protection.**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs  
 Number 2 – Food = Sustainable Agriculture = Animal welfare – ancient processing methods of cooking dogs and cats alive, or force feeding ducks, using Ancient Egypt Method – are not part of Sustainable Agriculture.

**Goal 2, Food – sustainable agriculture – UN places huge importance on Animal Welfare. Goal 3 – hurting animals this way, is not good for the mental health of the workers. It is not good for the mental health of consumers to hold beliefs about eating tortured dogs and cats, it is not good for the mental health of children who see dogs and cats boiled alive in Asian markets. Goal 12, responsible production and consumption – using torturous ancient methods on a live animal, boiling alive, or force feeding is not responsible. Goal 15 life on land UN doc Transforming our Planet states all animals no matter how small value, need protection.**

#### **7. The case being, linkages with any other issue**

Linking with Civil Society, Global Citizens. Culture of peace. Living in harmony with animals – UN Document Transforming our Planet, intro point 9 speaks of protecting all animals.

#### **8. Additional Supporting Information**

*Additional information*

*Evidence*

[https://www.facebook.com/EndFoodTortureCulture/photos\\_stream](https://www.facebook.com/EndFoodTortureCulture/photos_stream)

*Knowledge gaps*

No gaps. There are thousands of photos that show the same live dog and cat meat torture process across Asia. There are thousands of photos showing force fed ducks, choking on too much food, and showing their backsides bursting out.

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

[https://www.facebook.com/EndFoodTortureCulture/photos\\_stream](https://www.facebook.com/EndFoodTortureCulture/photos_stream)



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Patrick Van Damme, Ghent University, Belgium		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	Belgium		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P23A Lots of people use 'neglected/underutilized species' (NUS) for food, without anyone knowing their nutritious value</i>		
Description of the issue <i>in less than 5 lines</i>	Urgent need to provide analytical data on nutritious value of alternative food sources (in the tropics/developing world)		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Our own research in RDCongo, Benin, Ecuador,... has shown this lack of analytical data to be a restriction in defining adequate food/diet policies; at best, we use proxies derived from known/mainstream food products that resemble the NUS at hand		
Main response proposed to address the issue	Collect raw/processed foods derived from NUS Analyse them for main nutrition/biochemical compounds Make data available to the broader scientific/user community		

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Main actor(s) concerned or involved in the response proposed

Academia, food/biochemistry labs  
Industry  
Donors (for finance)

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1585. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1586. Breadth: Are there many people affected?	Few		Many	
1587. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1588. Impact on Availability				
1589. Impact on Access				
1590. Impact on Utilization/ nutrition				
1591. Impact on Stability				

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

1592. Impact on most vulnerable people	Specify as appropriate		
1593. Impact on women			
1594. Impact on children			
1595. Impact on marginalized populations	Specify as appropriate		
1596. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>139</sup>

<sup>139</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### Open Inquiry on *Critical and Emerging Issues in the area of Food Security and Nutrition, 2016 Edition*

#### About the respondent

Name, Surname and Institution	<b>Dr. Santosh Kumar Mishra, Population Education Resource Centre (PERC)</b> Department of Continuing and Adult Education and Extension Work, S. N. D. T. Women's University, Mumbai, Maharashtra, India ( <a href="http://sndt.ac.in">http://sndt.ac.in</a> ) Email: <a href="mailto:drskmishrain@yahoo.com">drskmishrain@yahoo.com</a>		
Do you answer on behalf of your institution, or as an individual?	<b>On behalf</b>	<b>As individual</b> ✓	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes ✓	No	
Country of the responding individual/institution Please mention international or regional, the case being	India: regional		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P24A Undernourishment, population growth and income pose significant challenges to achieving global food security.</i>		
Description of the issue <i>in less than 5 lines</i>	Major obstacles to food security include extreme poverty, inadequate food distribution, supply disruptions, food waste, government policies that inhibit trade and negatively affect farmers, growth of biofuels, environmental impact, growing resistance to the use of some agricultural technology and price volatility.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b>Challenge</b> ✓	<b>Opportunity</b>	<b>It depends</b> (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Historical review method has been used to identify the issues and assess its importance for global food security and nutrition. Research reports, government publications and other documents have been referred to.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	Food security can be improved by: (a) <i>enabling open markets,</i> (b) <i>supporting smallholder farmers,</i> (c) <i>reforming biofuels mandates,</i> (d) <i>leveraging technology,</i> (e) <i>fostering cooperation between public and private sectors, and</i> (f) <i>encouraging agricultural investment.</i>
Main actor(s) concerned or involved in the response proposed	Policy makers.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?	*		Briefly mention how this may be the case

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue				*	
Nature of the main impact of the issue on FSN	*		*	*	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**N. A.**

## 3. Attributes of the Issue

	<i>Classification (**)</i>			
1597. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point **		Systemic issue	
1598. Breadth: Are there many people affected?	Few		Many **	
1599. Scale: local/national/regional/global?	Local	National	Regional	Global **
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1600. Impact on Availability	+		
1601. Impact on Access	+		
1602. Impact on Utilization/ nutrition	+		
1603. Impact on Stability	+		
1604. Impact on most vulnerable people	++ Specify as appropriate		
1605. Impact on women	++		
1606. Impact on children	+		
1607. Impact on marginalized populations	++ Specify as appropriate		
1608. Cost to address the issue	Low	Middle +	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

N. A.

#### 4. Time Scale

Timeframe (*)	Now/Short term (1-5 years)	Medium term (5-10 years)	Long term (10-20 years +)
Moment when the issue will have an impact	✓		
Moment to act to address the issue	✓		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

N. A.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle ✓	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

N. A.



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with SDGs (1 to 17)<sup>140</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**N. A.**

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<sup>140</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**7. The case being, linkages with any other issue**

**N. A.**

**8. Additional Supporting Information**

*Additional information*

**N. A.**

*Evidence*

**N. A.**

*Knowledge gaps*

**N. A.**

*References*

**N. A.**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### Open Electronic Consultation on a Draft V0 of *Nutrition and Food Systems*

#### About the respondent

Name, Surname and Institution	<b>Dr. Santosh Kumar Mishra, Population Education Resource Centre (PERC)</b> Department of Continuing and Adult Education and Extension Work, S. N. D. T. Women's University, Mumbai, Maharashtra, India ( <a href="http://sndt.ac.in">http://sndt.ac.in</a> ) Email: <a href="mailto:drskmishrain@yahoo.com">drskmishrain@yahoo.com</a>		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual <input checked="" type="checkbox"/>	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes <input checked="" type="checkbox"/>	No	
Country of the responding individual/institution Please mention international or regional, the case being	India: regional		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P24B Sustainable food industry</i>		
Description of the issue <i>in less than 5 lines</i>	A growing number of analyses question the long-term sustainability of the current trends in the production and consumption of food.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b>Challenge</b> <input checked="" type="checkbox"/>	<b>Opportunity</b>	<b>It depends (please specify)</b>
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	Historical review method has been used to identify the issues and assess its importance for global food security and nutrition. Research reports, government publications and other documents have been referred to.		

Main response proposed to address the issue	<ul style="list-style-type: none"> <li>▪ There is general recognition of the importance of sound natural resource policy to ensure long-term sustainable food production.</li> <li>▪ Most stakeholders recognize that farmers play an important role in producing food while at the same</li> </ul>
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	<p>time managing a significant portion of natural resources and contributing to a range of public goods.</p> <ul style="list-style-type: none"><li>▪ Sound soil and water management is critical for ongoing agricultural production. Improvement in soil management is seen as a key factor for improving productivity. At the same time, greater efficiency in water use is primarily seen as the best way to manage trade-offs between environmental and food production objectives.</li><li>▪ Some stakeholders view environmental regulations as a major inhibitor to farmers' and fishers' abilities to produce food. There is, thus, need for continuous improvements in food production to minimize effects on the environment.</li><li>▪ The merits and shortfalls of different food production systems are a major point of interest in relation to farming and fishing industries.</li><li>▪ Many stakeholders perceive an opportunity to minimize unnecessary food waste and redirect surplus food to members of society facing food insecurity. Organizations that donate surplus food to those in need are seen as a positive example of how food waste could be reduced.</li><li>▪ Reducing food waste is seen as an easy way to save money, reduce pressures to produce more food globally, reduce the impact on the environment, and help others in need. Creating functional products from food waste, such as compost,</li></ul>
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	is seen as having dual benefits of reducing food waste in landfill while also reducing reliance on synthetic fertilizers for further food production.
Main actor(s) concerned or involved in the response proposed	Policy makers, farmers and sustainable development experts.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		*	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	*	*	*	*	
Nature of the main impact of the issue on FSN	*		*	*	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**N. A.**

## 3. Attributes of the Issue

	Classification (**)			
1609. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point **		Systemic issue	
1610. Breadth: Are there many people affected?	Few		Many **	
1611. Scale: local/national/regional/global?	Local	National	Regional	Global **
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

For items 4-11 below, please use the classification [ — —, —, 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1612. Impact on Availability	++
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1613. Impact on Access	++		
1614. Impact on Utilization/ nutrition	++		
1615. Impact on Stability	++		
1616. Impact on most vulnerable people	++ Specify as appropriate		
1617. Impact on women	++		
1618. Impact on children	++		
1619. Impact on marginalized populations	++ Specify as appropriate		
1620. Cost to address the issue	Low	Middle ✓	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: **N. A.**

#### 4. Time Scale

Timeframe (*)	Now/Short term (1-5 years)	Medium term (5-10 years)	Long term (10-20 years +)
Moment when the issue will have an impact	✓		
Moment to act to address the issue		✓	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**N. A.**

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

**N. A.**

#### 6. Linkages with SDGs (1 to 17)<sup>141</sup>

<sup>141</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**N. A.**

**7. The case being, linkages with any other issue****N. A.****8. Additional Supporting Information***Additional information* **N. A.***Evidence* **N. A.***Knowledge gaps* **N. A.***References* **N. A.****Institutional Affiliation and Mailing Address of Contributor:****Dr. Santosh Kumar Mishra (Ph. D.),**

Technical Assistant,

Population Education Resource Centre (PERC),

Department of Continuing and Adult Education and Extension Work,

S. N. D. T. Women's University,

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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Sabin Bieri, Centre for Development and Environment, University of Bern</b>	
Do you answer on behalf of your institution, or as an individual?	<b>On behalf</b>	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	<b>Yes</b>	No
Country of the responding individual/institution Please mention international or regional, the case being	Switzerland	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P25A Employment in commercialized agriculture influences food security and nutrition of rural communities.</i>
Description of the issue <i>in less than 5 lines</i>	Commercialized agriculture is supposed to create employment for the rural population, however, it often also destroys jobs of the locals. The subsequent stratification of rural societies and its effects on food security need further investigation.
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<p style="text-align: center;"><b>It depends</b></p> <ul style="list-style-type: none"> <li>- On the nature of the jobs (job security, skills needed/skills trained, social benefits) created in the course of agric. commercialization</li> <li>- On who these jobs are offered to</li> <li>- On production shifts/the combination of subsistence and commercial agricultural production for different farming households</li> <li>- On intra-household division of labour</li> <li>- On rules and regulations of the agricultural labour market</li> </ul>
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Within-case/cross-case comparative longitudinal studies in countries with a high share of agriculture contribution to their GDP. Systematisation of literature and studies with partial analysis and/or investigation of singular aspects of the problem. Leading questions that remain unresolved: How many jobs are created in a given area of commercialized production? How do different subsistence-employment relations affect food security?

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

Main response proposed to address the issue	Systematic analysis of the importance of jobs for the rural population and the effects of increasing wage dependence on rural development in terms of nutrition and food security. This includes intra-household division of labour, including full-fledged time-use surveys, and the assessment of nutritional facts within households. The focus is on comparing different segments of the population (land holders vs landless, different access to resources, ethnic segregation, gender and generational differences), and different job situations (international companies, subcontractors, direct employment). The response will be based on these results, including guidelines of fair employment and for regulations of the rural labour market.
Main actor(s) concerned or involved in the response proposed	National and district-level decision makers within the fields of economic development/ministries of labour and agriculture/ministries of youth/gender equality; decision makers concerned with FDI. Private sector: Relevant actors along the value chain, including international and national companies and private investors). Civil society: farmer associations, labour unions, women's and youth organisations, consumer associations.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			Largely external, but becoming an integrative part of food systems as commercialization proliferates.

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	xxx			xx	
Nature of the main impact of the issue on FSN	xxx	xx	xx	x	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Resource governance is put under pressure as new frontiers of production are being explored. Social and cultural systems may or may not be flexible enough to accommodate the new dynamics, which may be a reason for bottlenecks in FSN.  
Environmental effects of large-scale commercialized and/or industrialised production has been widely described in the literature.

## 3. Attributes of the Issue

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

	<b>Classification (**)</b>			
1621. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			Systemic issue
1622. Breadth: Are there many people affected?	Few			Many
1623. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>A wide range of countries in the Global South in SS Africa, SAsia and LAmerica</i>	Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1624. Impact on Availability	+			
1625. Impact on Access	— —			
1626. Impact on Utilization/ nutrition	+			
1627. Impact on Stability	— —			
1628. Impact on most vulnerable people	— — - usually these are the landless which makes them extremely dependent in terms of access			
1629. Impact on women	++ (??)			
1630. Impact on children	+ (??)			
1631. Impact on marginalized populations	See above			
1632. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Many of these issues remain unclear and need to be further investigated. Some assumptions might be turned into their contrary – i.e. employment in agriculture strengthens women's position and their bargaining power within and beyond the household and thus their FSN. This depends on the nature of these jobs and on the motives of taking a job in the first place (is it really a choice or is it out of pure necessity).

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact		X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

observation: Within a globalized economy, agricultural commercialization and rural employment is here to stay. It is time to investigate the nature of these commercialization processes and the importance of jobs to the rural population, and, in particular, to different segments of the rural population. The impact will be immediate in some instances, but medium and long term in essence.

### 5. Degree of confidence

Solidity of currently available knowledge base.	<b>Low</b>	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: Rural employment has been much neglected in research and development policy, where the focus was on urban employment. Data on rural employment is scarce, and systematic analyses of employment effects on FSN are largely missing.

### 6. Linkages with SDGs (1 to 17)<sup>142</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

2  
8  
10

<sup>142</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## 7. The case being, linkages with any other issue

Growth-oriented development strategies  
National poverty alleviation strategies  
Export-orientation for agricultural development

## 8. Additional Supporting Information

*The importance of rural employment has largely been understated, and its relevance for FSN remains largely in the dark. Classic rural development has usually been focused on small producers, family farming OR large-scale production. Employment and its effects on FSN were being eclipsed. Furthermore, whereas women's contribution to agriculture has received considerable attention in recent debates, the effect on FSN as they increasingly enter the agricultural labour market remains unexplored*

### Evidence

Evidence about the link between women's position and children's nutrition is established, and while indications on women's workload have been articulated, data remains anecdotic because time use surveys are costly and rarely implemented.

### Knowledge gaps

The effect of wage dependence on FSN, in particular with the massive entrance of women into the rural labour market. While a job may substantially improve a woman's position within her household and her community, the question of the division of labour and the shift of duties, in particular regarding FSN-related work, to lower-ranked persons, has unknown effects and needs to be systematically explored.

### References

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Oya C, 2012. Contract-farming in Sub-Saharan Africa. A survey of approaches, debates and issues. Journal of Agrarian Change 12, 1. 1-33. 313-333.

Sender, J, Cramer, C, Oya C. 2006. Women working for wages. Putting flesh on the bones of a rural

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

labour market survey in Mozambique. Journal of Southern African Studies, 32, 2.

See also: [www.fate.unibe.ch](http://www.fate.unibe.ch)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Stella Joy Active Remedy Ltd.		
Do you answer on behalf of your institution, or as an individual?	On behalf of Active Remedy Ltd.	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	United Kingdom		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P26A Safeguarding the global water cycle for food security, nutrition and health</i>		
Description of the issue <i>in less than 5 lines</i>	The global water cycle is central to the Earth's climate system. However it is utterly dependent upon various ecosystems to function effectively and these are vital for sustaining the quantity and quality of water available within a watershed.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Without adequate amounts of fresh water there is no food security for the majority of life on Earth. According to an FAO CFS/HLPE Report in 2015, entitled 'Water for Food Security and Nutrition' <i>"Ecosystems and landscapes sustain water resources. Forests play a major role in the water cycle, ensuring quantity, quality and stability of water for human use."</i> Goal 6 on Water of the 2030 S.D.G Agenda supports this by including Target 6.6 as a necessity for fresh water security.		
Main response proposed to address the issue	Implement Target 6.6: <i>"By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes"</i> Restoring mixed mountain forests is critical because of their vital role water supply and regulation. (UNESCO, 2013, 'Climate Change impacts on Mountain Regions of the World') Here is a link to a UNFCCC Tool for Adaptation, which could be used: <a href="http://www4.unfccc.int/sites/nwp/pages/item.aspx?ListItemId=25551&amp;ListUrl=/sites/nwp/Lists/MainDB">http://www4.unfccc.int/sites/nwp/pages/item.aspx?ListItemId=25551&amp;ListUrl=/sites/nwp/Lists/MainDB</a>		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

Active Remedy Ltd, partners with Mountain Partnership and the UNFCCC in the Nairobi Work Program.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1633. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1634. Breadth: Are there many people affected?	Few		Many	
1635. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1636. Impact on Availability	++			
1637. Impact on Access	++			
1638. Impact on Utilization/ nutrition	++			
1639. Impact on Stability	++			



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1640. Impact on most vulnerable people	++Specify as appropriate		
1641. Impact on women	++		
1642. Impact on children	++		
1643. Impact on marginalized populations	++Specify as appropriate		
1644. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>143</sup>

<sup>143</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by 6 October 2016 by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Goal 6. Adequate supplies of fresh water is linked to the fulfillment of every SDG.

*“We recognize that water is at the core of sustainable development as it is closely linked to a number of key global challenges. We therefore reiterate the importance of integrating water in sustainable development and underline the critical importance of water and sanitation within the three dimensions of sustainable development.”* (The Future We Want RES/A/66/288 para.119)

## 7. The case being, linkages with any other issue

## 8. Additional Supporting Information

*Additional information “One in three people already lives in a country with moderate to high water stress, and by 2030 nearly half the global population could be facing water scarcity, with demand outstripping supply by 40 per cent.”* (Banki Moon, 2013)

*“For future food security, land and water management needs to preserve ecosystem functions and ensure the future of the resource. Sustainable management of ecosystems, and an ecosystem’s approach to water management from local to continental levels is key to ensuring quantity and quality of water for food security and nutrition in the future.”* (FAO CFS/HLPE, Water for Food Security and Nutrition, 2015)

### Evidence

***“Ecosystems and landscapes sustain water resources. Forests play a major role in the water cycle, ensuring quantity, quality and stability of water for human use.”*** (FAO CFS/HLPE 2015 Water for Food Security and Nutrition,)

[http://www.fao.org/fileadmin/user\\_upload/hlpe/hlpe\\_documents/HLPE\\_Reports/HLPE-Report-9\\_EN.pdf](http://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/HLPE_Reports/HLPE-Report-9_EN.pdf)

***“Given their important role in water supply and regulation, the protection, sustainable management and restoration of mountain ecosystems will be essential.”*** (UNESCO, 2013, ‘Climate Change impacts on Mountain Regions of the World’)

<http://unesdoc.unesco.org/images/0022/002246/224605M.pdf>

### Knowledge gaps

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

FAO, 2015 CFS/HLPE, Water for Food Security and Nutrition

UN, 2012, The Future We Want RES/A/66/288 para.119

UNESCO, 2013, Climate Change impacts on Mountain Regions of the World

UN, 2015, Transforming our world: the 2030 Agenda for Sustainable Development

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Doreen Stabinsky, College of the Atlantic	
Do you answer on behalf of your institution, or as an individual?	On behalf	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	USA	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P27A Impacts from climate change mitigation technologies (negative emissions technologies) and strategies that rely extensively on the land sector, including bioenergy carbon capture and storage</i>		
Description of the issue <i>in less than 5 lines</i>	Climate models promote the large-scale use of negative emissions technologies such as bioenergy carbon capture and storage (BECCS) as the most cost-minimizing means to keep temperature rise below 2C. Some scenarios posit dedicated land area needed would be on the order of magnitude of the area of the Indian subcontinent – with obvious implications for food production and food security.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	This question is unclear.		

Main response proposed to address the issue	Investigate the food security impacts of various negative emissions technologies and strategies that involve diverting large amounts of arable land to the purpose of climate change mitigation.
---	--

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

HLPE special report  
In coordination with IPCC

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	x		

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue			x		
Nature of the main impact of the issue on FSN	x	x	x	x	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1645. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point			
1646. Breadth: Are there many people affected?				Many
1647. Scale: local/national/regional/global?	Local <i>Where BECCS facilities might be sited</i>	National <i>Where BECCS facilities might be sited</i>	Regional <i>Where BECCS facilities might be sited</i>	Global

For items 4-11 below, please use the classification [ — — , — , 0 , + , ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1648. Impact on Availability	--
1649. Impact on Access	--
1650. Impact on Utilization/ nutrition	--

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1651. Impact on Stability	--		
1652. Impact on most vulnerable people	x		
1653. Impact on women	x		
1654. Impact on children	x		
1655. Impact on marginalized populations	x		
1656. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	x	x	x
Moment to act to address the issue	x		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Without dramatically reducing emissions in the short term, there will be significantly increased pressure to achieve climate mitigation through the land sector. The longer we wait to reduce emissions, the larger the food security threat, directly from climate impacts and also from large-scale geo-engineering technologies, including negative emissions technologies.

#### 5. Degree of confidence

Solidity of currently available knowledge base.			High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with SDGs (1 to 17)<sup>144</sup>**

2 and 15

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

- <https://theconversation.com/keeping-warming-below-1-5-is-possible-but-we-cant-rely-on-removing-carbon-from-the-atmosphere-68421>
- <http://climateanalytics.org/blog/2016/new-research-confirms-feasibility-of-the-1-5c-limit.html>
- [http://climateanalytics.org/files/feasibility\\_1o5c\\_2c.pdf](http://climateanalytics.org/files/feasibility_1o5c_2c.pdf)
- <http://science.sciencemag.org/content/354/6309/182>
- <http://sei-us.org/publications/id/577>
- <https://www.sei-international.org/publications?pid=3042>
- <http://www.fern.org/goingnegative>
- <http://www.wri.org/publication/climate-benefits-tenure-costs>

<sup>144</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

*References*



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Silvia Giovanazzi, U.S. Mission to the UN Agencies in Rome	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	P28A Food Safety and Urban Food Systems		
Description of the issue <i>in less than 5 lines</i>	Urban food systems and ultra-processed foods. Urban food systems tend to be obesogenic. This also raises the need to reevaluate how we measure dietary quality. Dietary diversity scores will no longer adequate as a proxy of dietary quality. Previously stunted populations are extremely vulnerable during the nutrition transition to metabolic syndrome and an increased risk of obesity and associated non-communicable diseases. In addition, ongoing cutting edge research and the human microbiome is important to the growing overweight/obesity rate globally.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.			

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	
Main actor(s) concerned or involved in the response proposed	

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1657. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1658. Breadth: Are there many people affected?	Few		Many	
1659. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1660. Impact on Availability			
1661. Impact on Access			
1662. Impact on Utilization/nutrition			
1663. Impact on Stability			
1664. Impact on most vulnerable people			
1665. Impact on women			
1666. Impact on children			
1667. Impact on marginalized populations			
1668. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>145</sup>

<sup>145</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs.

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

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and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

References

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Silvia Giovanazzi, U.S. Mission to the UN Agencies in Rome		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being			

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P28B The Double Burden of Malnutrition and Epigenetics</i>		
Description of the issue <i>in less than 5 lines</i>	WHO just published the first ever analysis of the global burden of food borne illnesses (Note: USDA staff contributed to this work). In addition, aflatoxin and other mycotoxins are associated with not only acute toxicity but also with stunting. This is the subject of significant research at this time.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.			

Main response proposed to address the issue	
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1669. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1670. Breadth: Are there many people affected?	Few		Many	
1671. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1672. Impact on Availability				
1673. Impact on Access				
1674. Impact on Utilization/nutrition				
1675. Impact on Stability				

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

1676. Impact on most vulnerable people			
1677. Impact on women			
1678. Impact on children			
1679. Impact on marginalized populations			
1680. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>146</sup>

<sup>146</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs.

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

References

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Silvia Giovanazzi, U.S. Mission to the UN Agencies in Rome		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being			

### 1. Overview of the issue

Issue <i>in 2 lines</i>	P28C Biodiversity And Nutrition		
Description of the issue <i>in less than 5 lines</i>	There is emerging but very nascent work done on this issue.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.			

Main response proposed to address the issue	
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1681. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1682. Breadth: Are there many people affected?	Few		Many	
1683. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1684. Impact on Availability				
1685. Impact on Access				
1686. Impact on Utilization/nutrition				
1687. Impact on Stability				

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

1688. Impact on most vulnerable people			
1689. Impact on women			
1690. Impact on children			
1691. Impact on marginalized populations			
1692. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>147</sup>

<sup>147</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

First indicate the most relevant SDG and, the case being, links existing with other SDGs.

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

References

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Pat Mooney, ETC Group	
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No
Country of the responding individual/institution Please mention international or regional, the case being	International – Headquarters in Ottawa, Canada. Satellite offices in Guelph and Val David, Canada; Mexico City, Mexico; Davao, Philippines;	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P29A The impact of market concentration in the agri-food sector on food security and nutrition.</i>		
Description of the issue <i>in less than 5 lines</i>	Concentration along the agrifood chain, particularly in agricultural inputs, is expected to reduce innovation at a time when climate change and food demand require greater innovation to ensure food security.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	<p>ETC Group has observed increased rates of corporate concentration along the food chain; an increased cost of innovation in seed and pesticide industries, particularly around development of new varieties; and have observed reductions in amount and quality of innovation in those industries.</p> <p>Identifying that there is a reduction in level of innovation going on – seeds and pesticides.</p> <p>We therefore conclude that this concentration reduces the incentive of concentrated enterprises to work with smallholder producers who are vital to food security.</p>		



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	First, concern has been galvanized by proposed mergers in first part of food chain, need to research related implications for concentration in the rest of the food chain. Second, need recommendations for governments on how to strengthen pro-innovation and anti-competition practices at the national level, including possibility of separating seed and pesticide companies.
Main actor(s) concerned or involved in the response proposed	CFS National anti-trust or anti-competition authorities Peasant organizations National food and agricultural industries

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		X	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X			X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

The increase in corporate concentration reduce innovation, increase prices including government subsidies and be most prejudicial to smallholder producers, likely forcing them off their land and increasing environmental damage, as well as endangering food security both in rural and urban areas.

## 3. Attributes of the Issue

	Classification (**)			
1693. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1694. Breadth: Are there many people affected?	Few		Many	
1695. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	

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For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1696. Impact on Availability	—
1697. Impact on Access	— —
1698. Impact on Utilization/ nutrition	— —
1699. Impact on Stability	— —
1700. Impact on most vulnerable people	— — Low income consumers and small-scale farmers
1701. Impact on women	— Women consumers and small-scale farmers
1702. Impact on children	—
1703. Impact on marginalized populations	— — Low income consumers and small-scale farmers
1704. Cost to address the issue	Low Middle High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

No. 4, 5: Negative because of decreased quality and increased cost of food.  
No 6. Reduction of crop diversity as well as increase in price  
No 7. Instability because will lead to agri-food system reliant on a small number of actors  
No 8: Small-scale farmers are vital to food security and nutrition. They feed up to 70% of the world's population.

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

If mergers are approved (12-18 months), they will catalyze a second round of mergers that will play out over next five years, and will have long term impacts on nature of industrial food system. Many of the proposed mega-mergers have not yet been approved, and there is a 12-18 month window of opportunity for national anti-competition authorities to prevent them from occurring.

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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There is evidence that market concentration in the agro-input sector increases costs of inputs for farmers and food prices. More research is needed on other sectors in the agri-food chain.

#### **6. Linkages with SDGs (1 to 17)<sup>148</sup>**

- 1. End poverty in all its forms everywhere
- 2. Zero hunger
- 10. Reduced inequality
- 17. Halt biodiversity loss

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<sup>148</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**7. The case being, linkages with any other issue**

Links to right to food, crop genetic diversity, climate change, fisheries, livestock, nutrition.

**8. Additional Supporting Information***Additional information*

If the proposed agribusiness mergers go through, 3 companies will control two-thirds of the seeds and pesticides market worth \$97 billion yearly. Typically, mergers and acquisitions in the agri-food sector have been followed with a reduction in research and development, reduction in diversity and choice of inputs for farmers and price increase.

*Evidence*

Agricultural input market has been steadily concentrating since 1994 when the top 8 seed sellers controlled 29% of the market - today they control 70%. Similarly, the top 8 pesticide producers controlled 50.1% of the market in 1994, today it's almost 75%. If the proposed mergers go through the top 8 concentration ratio will become the top 4.

Through this consolidation, and contrary to expectation, research and development budgets were typically downsized not expanded (Lynch and Chazan, 2014). Between 1995 and 2012, the number of pesticide R&D companies dropped by half, from 35 companies to 18, the number of active ingredients in the R&D pipeline decreased by 60% between 2000 and 2012 and the cost of pesticide development rose by 118% between 1995 and 2005. It costs \$256 million to introduce a new pesticide to the market.

Concentration of private sector R&D has also seen a reduction in diversity available to farmers. A 2015 study of five Nordic countries indicated that consolidation (from 1950 to the present) has resulted in a decrease in the number of available cultivars, a shift to focus towards a few crops and hybrids and termination of breeding programs for regionally relevant crops. (Solberg and Breian, 2015).

Further more, another study on maize variety availability in Spain, Germany, Austria and Switzerland found that local seed companies and breeding organizations increased farmers' choices whereas multinational breeders offered fewer choices (Hilbeck et al. 2013)

Market concentration also eventually leads to higher input prices to the detriment of farmers and with consequences on food security. Prices of farm inputs in the US rose faster than the price farmers received for their commodities between 1990 and 2010. In particular, seed prices spiked the higher more than doubling relative to the price farmers received for their crops. (Fuglie et al., 2011).

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

We don't know what the downstream impact of mergers in agricultural inputs will mean (impacts on rest of food chain). Nor to what degree this will catalyze defensive merger activity among processors and retailers in food system. Current mergers have implications for fertilizer industry, and we are not sure how they will respond.

While there are mergers along the entire food chain, these mergers will likely catalyze mergers in fertilizers, traders, possibly in processors and retailers.

*References*

Clapp, Jennifer, and Doris A. Fuchs. *Corporate power in global agri-food governance*. MIT Press, 2009.

ETC Group, "The Monsanto.Bayer tie-up is just one of seven; Mega-mergers and Big Data Domination Threaten Seeds, Food Security", September 15 2016. [www.etcgroup.org](http://www.etcgroup.org)

Fuglie, K., Paul Heisey, John King, Carl Pray, Kelly Day-Rubenstein, David Schimmelpfennig, Sun Ling Wang, and Rupa Karmarkar-Deshmukh, Research Investments and Market Structure in the Food Processing, Agricultural Input, and Biofuel Industries Worldwide, USDA, Economic Research Service, December 2011.

Lynch, D.J., Chazan G., Bayer-Monsanto sows seeds of doubt among regulators, Financial Times, May 30, 2016. <http://www.ft.com>

Solberg, S. Ø. & L. Breian, "Commercial cultivars and farmers' access to crop diversity: A case study from the Nordic region," *Agricultural and Food Science* (2015) vol 24: 150–163.

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Jim Thomas, ETC Group.	
Do you answer on behalf of your institution, or as an individual?	<input checked="" type="checkbox"/> On behalf	
Do you agree if this contribution is made available to the public as part of the proceedings?	<input checked="" type="checkbox"/> Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International Organisation (Canada, Philippines, Mexico, USA)	

#### 1. Overview of the issue

Issue in 2 lines	<i>P29B Wide disruptive impacts of next generation biotechnologies on food security and nutrition.</i>		
Description of the issue in less than 5 lines	A next generation of genetic engineering techniques (gene-editing, synthetic biology, RNAi, Gene Drives) are disrupting value chains, transforming agrifood systems, impacting agro-ecological practice, farmers rights and sharing of genetic resources.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? Please tick the appropriate box	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> It depends – clear challenges but also applications presented as opportunities
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	ETC Group undertakes monitoring of biotechnology trends through literature review, interviews in the field and patent reviews. We analyse near term and long term applications for food security and nutrition impacts, preparing case studies and a database of applications. We participate in expert foresighting and technology assessment exercises on emerging biotechnologies (eg. CBD Ad Hoc Technical Expert Group on Synthetic Biology, EU SYNENERGENE Consortium and civil society assessments.)		

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Main response proposed to address the issue	<p>Firstly, the near term implications for farmers and eaters from the current proliferation of biosynthetic alternatives to natural products should be formally assessed with regard to livelihood, farm landscapes. Soils, farmers rights, food security and nutrition impacts - with full participation of impacted producers. Governance frameworks can then be explored and proposed to protect against impacts of displacements and other changes.</p> <p>Secondly, the likely impact of gene-edited and biosynthetic crops, livestock and pollinators on farming systems (especially agroecological systems) including proposed “climate smart applications” and gene drives should be mapped out and evaluated. Existing frameworks for governance of biotechnology in food and agriculture should be tested for adequacy against the new techniques. Urgent advice and a moratorium is required to ensure no deleterious impacts arise from experimental gene drive release and to ensure gene drives are not used as a weapon against food and agriculture.</p>
Main actor(s) concerned or involved in the response proposed	<p>Small scale producers - especially of flavours, fragrances, spices, essential oils, food and vegetable oils, sweeteners, oleochemicals.</p> <p>Peasant, smallholder, fisherfolk and livestock keeper organisations.</p> <p>Agroecology and organic agriculture organisations.</p> <p>Civil society organisations plus independent scientific and technical bodies with expertise in biotechnology issues.</p>

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	x		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x		x	x	Technological and risk.
Nature of the main impact of the issue on FSN	x	x	x	x	Gene drive raises military threats

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

The range of applications made possible by the next generation genetic technologies and potential to radically transform value chains, species and agrifood landscapes means that a wide range of physical, social and economic impacts come into play. Gene Drives especially challenge current assumptions.

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### 3. Attributes of the Issue

	Classification (**)			
1705. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				X Systemic issue
1706. Breadth: Are there many people affected?				X Many
1707. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	X Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1708. Impact on Availability	--			
1709. Impact on Access	--			
1710. Impact on Utilization/ nutrition	--			
1711. Impact on Stability	--			
1712. Impact on most vulnerable people	--Small scale farmers, women farmers			
1713. Impact on women	--			
1714. Impact on children	--High Intergenerational implications			
1715. Impact on marginalized populations	--Indigenous, peasants			
1716. Cost to address the issue	Low	X Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

4-5 – digitization and biosynthesis of genetic resources enables increased monopoly  
 6 – Displacement of natural products leads to erosion of farm economies, unpredictable genetic changes and focus on single compounds undermines nutrition  
 7 – displacement and gene drive threats to commodity and food chains, biomass use threatens ecosystems.  
 9- many targeted natural product displacements are grown by women (Shea, saffron, rose)

### 4. Time Scale

Timeframe (*)	Now/Short term (1-5 years)	Medium term (5-10 years)	Long term (10-20 years +)
Moment when the issue will have an impact	x	x	x
Moment to act to address the issue	x		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

Synthetic Biology production of food ingredients is already in the market and accelerating, already impacting



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farmers (eg demonstrated volatility in Artemesia market). The gene-editing of crops, livestock, pollinators etc is just now emerging onto market (eg Cibus canola, hornless cattle etc)

## 5. Degree of confidence

Solidity of currently available knowledge base.	<b>X Low</b>	Middle	High
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The underlying 'digitization' of biotechnology is far advanced. Several fora have identified international governance as far behind (eg WEF, UN CBD, IUCN). Techniques are experimental/poorly understood yet moving into commercial use. Analysis of socio-economic impacts is limited.

## 6. Linkages with SDGs (1 to 17)<sup>149</sup>

Most relevant SDGs and, the case being

- 1 – No Poverty - Displacement of smallholder livelihoods/disruption of value chains.
- 2- Zero hunger – disruption of rural livelihoods, threats to food stability (eg. from gene drives)
- 3- Good Health and Well Being – uncertainties in nutrition from new techniques, threats to health.
- 8 – Decent work and economic growth – displacement and disruption of existing livelihoods
- 9- Industry innovation and infrastructure – new biotechnologies as innovation, impact on agroecology
- 12 Responsible consumption and production – transparency and consumer impacts, displacement
- 15 Life on land – impacts on biodiversity, especially agrobiodiversity

Plus cross cutting theme on Technology (technology Facilitation Mechanism and the STI Forum as established in concert with the SDG's.)

Links existing with other SDGs

- 5 –Gender Equality – natural product displacement impacts women-dominated harvests
- 7- Affordable and clean energy – new Proposals for biofuels and altered photosynthesis
- 10 – Reduced inequalities – strong IP and access issues, monopoly impacts
- 13 - Climate action – speculative climate applications emphasized – eg climate smart, biofuels
- 14 - Life below water – applications to aquaculture and wild fisheries – especially gene drives.
- 16 - Peace, justice and strong institutions – threats to harvests from gene drives.

<sup>149</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**7. The case being, linkages with any other issue**

Links to Right to Food, Sustainable Development, Farmers Rights, Genetic Resources for Food and Agriculture, Conservation of biodiversity and agrobiodiversity, Intellectual property with regard to genetic resources, Commodity and trade issues, Responsible Research and Innovation, Dual use issues and threats to food from warfare, Science and Technology governance including research for food and nutrition. Technology assessment, transfer and governance. Responsible and sustainable consumption and production, Concentration, mergers and monopoly in agrifood system..

**8. Additional Supporting Information***Additional information*

Synthetic Biology is the subject of extensive deliberation under the Convention on Biological Diversity. Publications prepared by that body reference, inter alia, the impacts on small holder farmers and indigenous producers of displacement by natural product biosynthesis as well as the socio-economic and landscape impacts resulting from increased use of biomass for synthetic biology systems. The most recent relevant decision, CBD Decision XII/24 (8), explicitly “Invites relevant organizations, including relevant United Nations organizations and bodies, to consider the possible implications of synthetic biology as it relates to their mandates”.

The ability of Synthetic biology and genome editing to allow digital transfer of genetic resources, thereby evading Material transfer rules is also a rising discussion in both the WHO with relation to virus sharing arrangements for vaccines, in the ITPGRFA and under the CBD and its Nagoya protocol. However the impact on farm livelihoods and nutrition has not been addressed.

The matter of Synthetic Biology as a major global risk – including to smallholder producers - was also identified by the 2015 World Economic Forum Global Risks report as one of the 15 major global risks. that report highlighted that “The invention of cheap, synthetic alternatives to high-value agricultural exports such as vetiver could suddenly destabilize vulnerable economies by removing a source of income on which farmers rely.” Gene Drives were also identified as high novel risk.

ETC is also observing considerable commercial movement by large agribusiness players in the switch to gene-editing strategies to deliver novel crops and livestock, partially as a means to evade definitions of GMO’s and thereby evade biotechnology regulations. Clear evidence of ‘offtarget’ impacts from gene editing platforms such as CRISPR-Cas9 raise a worrying potential gap around food safety and reliability. These techniques are also subject to fierce patent battles and monopoly licensing arrangements are emerging.

*Evidence*

There are numerous relevant reports including:

ETC Group “Synthetic Biology, Biodiversity & Farmers – Case studies exploring the impact of synthetic biology on natural products, livelihoods and sustainable use of biodiversity” April 2016 – available online at <http://www.synbiowatch.org/wp-content/uploads/2016/09/synbio-biodiversity-farmers.pdf>

Also available as a Synthetic Biology Natural Products Map –online at <http://www.synbiowatch.org/commodities/natural-products-map/>

Replies to the questionnaire are expected by 6 October 2016 by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

**UNEP/CBD/SYNBIO/AHTEG/2015/1/3** - Report of the Ad Hoc Technical Expert Group on Synthetic Biology. Available online at <https://www.cbd.int/doc/?meeting=SYNBIOAHTEG-2015-01>

**CBD Technical Series No. 82. SYNTHETIC BIOLOGY** – online at <https://www.cbd.int/doc/publications/cbd-ts-82-en.pdf>

World Economic Forum, “Global Risks 2015 – 10<sup>th</sup> edition” Jan 2015. Relevant section available online at - <http://reports.weforum.org/global-risks-2015/part-2-risks-in-focus/2-4-engineering-the-future-how-can-the-risks-and-rewards-of-emerging-technologies-be-balanced/#view/fn-4>

ETC Group and Heinrich Boell Stiftung, “Outsmarting Nature? Synthetic Biology and Climate Smart Agriculture” Nov 2015 – available online at <http://www.etcgroup.org/content/outsmarting-nature/report>

NASEM, *Gene Drives on the Horizon: Advancing Science, Navigating Uncertainty, and Aligning Research with Public Values* NASEM Washington, DC, 2016). Online at <http://nas-sites.org/gene-drives/>

Civil Society Working Group on Gene Drives, “Reckless Driving – Gene Drives and the End of Nature”, Sept 2016 – available online at <http://www.etcgroup.org/content/reckless-driving-gene-drives-and-end-nature>

Civil Society Working Group on Gene Drives, “The Case for a Global Moratorium on Genetically-engineered Gene Drives” December 2016 (forthcoming) – available at <http://www.synbiowatch.org/gene-drives/>

Dr Ricarda A Steinbrecher, Genetic engineering in plants and the “New breeding techniques (NBTs)” - Inherent risks and the need to regulate EcoNexus, December 2015 available online at <http://www.econexus.info/sites/econexus/files/NBT%20Briefing%20-%20EcoNexus%20December%202015.pdf>

#### *Knowledge gaps*

*There is incomplete knowledge of the range of new genetic techniques now moving into commercial use and where they are being applied on the market.*

*There is limited knowledge of which agrifood ingredients are now being biosynthesized by synthetic Biology means and in turn how that is impacting supply chains. ETC Group is compiling a database which currently contains over 100 examples of synthetic biology ingredients at different stages of developments Around half appear to already be in the market or very close. We would be happy to share this with the HLPE.*

*There is extremely limited understand of biosafety impacts , including impacts on phenotype, behavior and ecological ramifications, from transformation of biological organisms using the new genetic techniques.*

*There is limited understanding of specific value chain and on farm economies that rely on botanical derived compounds now being replaced through biosynthesis – particularly as they affect small scale farmers, pastoralists and wild pickers and gatherers*

*There is a limited understanding of the state of development of gene-edited and biosynthesized crops and livestock and its proximity to market (as a result of commercial secrecy)*

*There is extremely poor understanding of the long term biosafety implications or stability of gene drive systems or of their likely ecological impacts, including impacts of species important for agrobiodiversity.*

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*There is little public understanding of current military and offensive projects involving the new genetic techniques, particularly gene drive systems.*

*References*

See Evidence.

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## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Donald Moore, Global Dairy Platform Inc		
Do you answer on behalf of your institution, or as an individual?	On behalf	<del>As individual</del>	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	<del>No</del>	
Country of the responding individual/institution Please mention international or regional, the case being	Globally representative organization with office based in the United States		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P30A Acknowledgement and understanding of the role that technology plays in food and nutrition security.</i>		
Description of the issue <i>in less than 5 lines</i>	Technology has and will continue to play a necessary role in food and nutrition security. Support for, education about, and distribution of technology for sustainable food systems must be part of any global food initiatives.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<del>Challenge</del>	Opportunity	<del>It depends</del>
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	The debate on sustainable food systems is a complex issue, but at the heart of the issue we all seem to agree that we want to have safe, affordable, accessible, nutritious food that is respectful of livestock, the environment and the farmers that produce it. Where we sometimes disagree is how to get there. We contend that in order to feed the growing world's population we should use all the tools that are available to us and to this end a HLPE study into the role of technology is vital.		
Main response proposed to address the issue	Research and reporting should be undertaken into the ways in which high-tech and low-tech agriculture and food production can fill different, complementary roles in a comprehensive and sustainable global food system. In order to develop a robust, resilient, and sustainable food ecosystem, multiple production systems and a wide variety of tools must be available. Research must be undertaken to help farmers and the entire food value chain identify the best tools and practices <i>for their individual contexts</i> , rather than approaches that may discount the contribution of technology without a sound scientific		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	basis for doing so.
Main actor(s) concerned or involved in the response proposed	Governments, IGO's, Private Sector, Civil Society & NGO's

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Consumer and civil society rejection of technology in agriculture may come from misunderstanding or a lack of knowledge.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
*Because the fundamental ways in which agricultural and food production influence and impact society, issues surrounding it, including the use of technology, are often economic, social, environmental, and governmental in nature.*

## 3. Attributes of the Issue

	Classification (**)			
1717. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1718. Breadth: Are there many people affected?	Few		Many	
1719. Scale: local/national/regional/global?	Local	National	Regional	Global

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	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>
For items 4-11 below, please use the classification [ — — , — , 0 , + , ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)			
1720. Impact on Availability	++		
1721. Impact on Access	++		
1722. Impact on Utilization/ nutrition	++		
1723. Impact on Stability	++		
1724. Impact on most vulnerable people	+		
1725. Impact on women	+		
1726. Impact on children	+		
1727. Impact on marginalized populations	+		
1728. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

*Open-mindedness towards adopting agricultural technologies, when contextually appropriate, will allow for greater adaptability in farming, variability in crops, and food and nutrition security in production and the full food value chain.*

#### 4. Time Scale

Timeframe (*)	Now/Short term (1-5 years)	Medium term (5-10 years)	Long term (10-20 years +)
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

*Technological innovation, development and incorporation into agricultural production is an ongoing process occurring across many disciplines. It will have impacts across all timeframes and requires continuous support.*

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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There is a lot of information available regarding existing technologies that could be advanced to help improve yields, reduce environmental impacts etc, however more work needs to be done to educate farmers and consumers of the positives role played by technology.

## **6. Linkages with SDGs (1 to 17)<sup>150</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Broad issues of agricultural production, and the tools, practices and knowledge that are involved, will have linkages with multiple SDGs.

The most relevant is #2 – Zero Hunger, as the fundamental purpose of agriculture is to feed people.

Additional strong links exist with:

#1 – End Poverty

#4 – Quality Education

#5 – Gender Equality

#8 – Decent Work and Economic Growth,

#9 – Industry, Innovation, and Infrastructure

#12 – Responsible Consumption and Production,

#13 – Climate Action,

#14 – Life Below Water,

#15 – Life on Land,

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<sup>150</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



## 7. The case being, linkages with any other issue

Clear linkages exist between technology and issues to do with education. Increasing the availability of technology will allow greater production from small producers, it will encourage youth to consider agriculture as a desirable career alternative and technology will level the playing field for disadvantaged populations.

## 8. Additional Supporting Information

*Additional information*

*Evidence*

*Knowledge gaps*

*References*

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**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Donald Moore, Global Dairy Platform Inc		
Do you answer on behalf of your institution, or as an individual?	<b>On behalf</b>	<del>As individual</del>	
Do you agree if this contribution is made available to the public as part of the proceedings?	<b>Yes</b>	<del>No</del>	
Country of the responding individual/institution Please mention international or regional, the case being	Globally representative organization with office based in the United States		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P30B The need for a systems approach to understanding food and nutrition security, societal, economic and environmental sustainability</i>		
Description of the issue <i>in less than 5 lines</i>	Debate on food, nutrition security and sustainability often focuses on simplistic variables such as GHG emissions per unit of food. Understanding and making decisions about a sustainable food system requires understanding the intersection between many scientific disciplines including environmental, nutritional, social and economic influences – many of which use very different and conflicting systems of measurement.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b>Challenge</b>	<del>Opportunity</del>	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	There are emerging frameworks and metrics that are including more systems based measurements. The National Academy of Sciences in the United States, suggests striving for, at minimum, diverse academic research teams.  Common data systems and metrics that cross disciplines of economic, health, nutrition, social and environmental should be considered. The concept of DALYs (Disability adjusted life years) may be a useful way of connecting different disciplines.		

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Main response proposed to address the issue	Rather than continue to measure and contrast crops, diets, and dietary patterns using one-dimensional metrics such as carbon footprint and land-use, support should be provided for studies that evaluate the full spectrum of impacts <i>and</i> the nutritional and societal benefits. This recognizes that secure and sustainable food production is measured holistically. Research efforts directed towards providing recommendations for food production and dietary guidance should support and promote models that capture all influences and benefits of production and consumption within food systems.
Main actor(s) concerned or involved in the response proposed	Academia, IGO's, Private Sector, NGO's,

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			Complete food system models will include multiple external and internal drivers

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	X	X	X	X	
Nature of the main impact of the issue on FSN	X	X	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	<i>Classification (**)</i>			
1729. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	<del>Critical point</del>		<b>Systemic issue</b>	
1730. Breadth: Are there many people affected?	<del>Few</del>		<b>Many</b>	
1731. Scale: local/national/regional/global?	<del>Local</del>	<del>National</del>	<del>Regional</del>	<b>Global</b>

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	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)			
1732. Impact on Availability	+		
1733. Impact on Access	+		
1734. Impact on Utilization/ nutrition	+		
1735. Impact on Stability	++		
1736. Impact on most vulnerable people	+		
1737. Impact on women	+		
1738. Impact on children	+		
1739. Impact on marginalized populations	+		
1740. Cost to address the issue	Low	<b>Middle</b>	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

*The benefits of more sophisticated models of global food systems will bring substantial positive impacts across society through improved decision-making capabilities. Costs involved include additional support for research.*

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X	X	X

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

*This topic addresses the fundamental ways in which food systems are measured and compared, and therefore will be relevant at all timeframes.*

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	<b>Middle</b>	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

*As noted in multiple resources in the references section below, there is significant recognition amongst subject matter experts that modeling and understanding food systems will be critical to achieving food and nutrition security. However there are currently few interdisciplinary studies that take a holistic approach to food systems, therefore additional research and a new “language” will be required in order to assess holistic outcomes. DALY’s may be a way to connect the outcomes from the disparate work.*

## **6. Linkages with SDGs (1 to 17)<sup>151</sup>**

The challenge here is in making sure that while addressing food, nutritional and sustainability challenges we do not cause unintended consequences by not having a complete understanding of all the components of a sustainable food system.

Change in one area will cause change in others. We have seen in the past decisions and indeed subsequent regulation based upon a limited understanding of all variables having profound impacts on diet and health.

Broad issues of agricultural production, and the tools, practices and knowledge that are involved, will have linkages with multiple SDGs. The most relevant is #2 – Zero Hunger, as the fundamental purpose of agriculture is to feed people.

Additional strong links exist with:

- #1 – No Poverty
- #3 – Good Health and Well-being
- #12 – Responsible Consumption and Production,
- #13 – Climate Action,
- #14 – Life Below Water,
- #15 – Life on Land,
- #8 – Decent Work and Economic Growth,
- #9 – Industry, Innovation, and Infrastructure

<sup>151</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## 7. The case being, linkages with any other issue

The current HLPE draft report on Nutrition and Food Systems is a good summary of current issues concerning nutrition, however it does not adequately address the question of the food system. While the opening includes a reasonable definition from that point on the draft makes references to limited environmental criteria, but does not deal with socioeconomic issues.

Changes in diets and dietary patterns will also potentially have impacts on health – but do we have sufficient understanding of whether these impacts will create other problems? The low-fat diet was intended to tackle issues concerning heart disease, instead because of a lack of understanding of the consequences of change, the world's population became increasingly obese at an alarming rate. Now science is able to demonstrate that fat consumption is not the culprit, but in many countries regulatory authorities are reluctant to change dietary advice.

Before we embark upon changes, we need to be sure that we fully understand the impacts on health and well-being, on rural and urban communities, on employment, women's and youth rights, trade and the environment.

We need to take a systems approach to the problem rather than tackle individual areas in a piece-meal fashion.

## 8. Additional Supporting Information

*Additional information*

*Evidence*

*Knowledge gaps*

## References

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Bev Postma, HarvestPlus		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P31A Improving the nutrient content of staple crops to reduce micronutrient malnutrition</i>		
Description of the issue <i>in less than 5 lines</i>	One in 3 people globally suffer from micronutrient deficiencies (MD) resulting from staple crop based low quality diets. Improvement of staples to contain micronutrients is proven to be an efficacious, cost-effective & scalable solution to reduce MD.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>		Opportunity	
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Common approaches to tackling MD include dietary diversification, fortification and supplementation. Over the last 15 years, research has demonstrated that another strategy, called biofortification, is an effective complement to these approaches in addressing micronutrient deficiency and related health problems. Biofortification involves breeding staple food crops to increase their micronutrient content or bioavailability, targeting foods widely consumed by rural families.		
Main response proposed to address the issue	Biofortification aims to provide sufficient levels of vitamin A, iron and/or zinc through staple food crops, based on existing consumption patterns. Biofortification relies on plant diversity to cross-breed under-utilized varieties of staple crops that are high in nutrients with high-performing varieties to get biofortified crops that are both productive and nutritious. Biofortified staple crops include provitamin A orange sweet potato, cassava and maize; iron beans and pearl millet, and zinc rice and wheat. Conventionally bred biofortified varieties of these crops have been officially released for production in more than 30 countries, and are being tested and grown in more than 50. By the end of		

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	2015, at least 4 million farming households in Africa, Asia and Latin America and the Caribbean have been reached with biofortified planting material.
Main actor(s) concerned or involved in the response proposed	HarvestPlus ( <a href="http://www.harvestplus.org">www.harvestplus.org</a> ) leads the global effort for biofortification. HarvestPlus partners with various actors across sectors and disciplines, including (1) CGIAR crop centres; NARES, and universities for breeding (2) developed and developing country universities and research centers for nutrition and impact research, (3) private seed companies; public extension and delivery agencies, and international, national and local NGOs for delivery of planting materials, and (4) national, regional and international policy fora (e.g., African Union's Comprehensive Africa Agriculture Development Programme [CAADP], and the Scaling up Nutrition [SUN] movement),

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?		x	Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x				
Nature of the main impact of the issue on FSN	x				

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The issue is internal to food systems as it is based on the premise the substitution of non-biofortified varieties with biofortified ones could improve the micronutrient deficiency status of vulnerable populations. The nature & impact relate to improved health & hence productivity of these populations.

## 3. Attributes of the Issue

	Classification (**)
1741. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Systemic issue

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1742. Breadth: Are there many people affected?				Many
1743. Scale: local/national/regional/global?				Global
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1744. Impact on Availability	++			
1745. Impact on Access	++			
1746. Impact on Utilization/ nutrition	++			
1747. Impact on Stability	++			
1748. Impact on most vulnerable people	++ children under 5, adolescent girls, women of child bearing age, rural households in developing countries			
1749. Impact on women	++			
1750. Impact on children	++			
1751. Impact on marginalized populations	++ Specify as appropriate			
1752. Cost to address the issue		Middle		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
Biofortification benefits those at highest risk of micronutrient deficiency (children, adolescent girls and women). Significant investments have been made for plant breeding and nutrition research (acceptability, efficacy & effectiveness) more investment needed for scaling up of biofortification

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:  
Efficacy research shows improvement in vulnerable populations' deficiency status & functional outcomes within one year of consumption. Population level impact is expected in medium to long term. Given 2.5 billion people suffer from Micronutrient malnutrition NOW is the right time to act.

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Middle to high: Evidence on acceptability, efficacy & effectiveness of vitamin A & iron biofortified crops is solid & favourable. Evidence on zinc crops is still being built. Number of released conventionally bred varieties with high levels of nutrients attests to the fact that biofortification works

#### **6. Linkages with SDGs (1 to 17)<sup>152</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

#2 Zero Hunger is the most relevant SDG to biofortification. There are also strong links to #1 No poverty #3 Good health and well-being, #5 Gender equality, #12 Responsible consumption and production and #17 Partnerships for the goals

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<sup>152</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

## 7. The case being, linkages with any other issue

- Biofortification is NOT a silver bullet. It is a **complementary strategy** to other approaches aimed at tackling micronutrient malnutrition, i.e., hidden hunger, including: supplementation, fortification and improvement of dietary diversity (e.g., through nutrition education, livestock and homestead food production programmes etc.).
- Agricultural biodiversity, i.e., plant genetic resources, is the main input to biofortification. **Conservation** of plant genetic resources (both in situ, in nature and in farmers' fields, and ex situ, in gene banks) is crucial. Biofortification will continue to increase the use value of plant genetic resources, as we continue to tap into these for improvement of nutrient content and other attributes (e.g., climate adaptation, resistance to resist pest and diseases that will be surfacing in years to come).
- Since several of the biofortified crops are traditionally women's crops (e.g., sweet potato, cassava and beans) improvement of these varieties are expected to contribute to the **gender equity and empowerment**
- Improvement in children's, adolescent girls and women's health outcomes are expected to help improve their **education** status and **productivity** and in the long run their **income** levels.
- Biofortified varieties are improved varieties and have **higher yields** than traditional varieties, therefore yield gains and associated income gains are expected (and also demonstrated by research) for farming households who switch from traditional varieties to biofortified ones.

## 8. Additional Supporting Information

### *Additional information*

Biofortified crops developed using conventional plant breeding methods (including provitamin A orange sweet potato [OSP], yellow cassava & orange maize; iron bean & pearl millet, and zinc rice & wheat) have been officially released for production in more than 30 countries, and are being tested and grown in more than 50. These releases, approved by the official national release committees of these countries, demonstrate that it is possible to increase the micronutrient content of (i.e., to biofortify) these crops using conventional breeding without sacrificing other production and consumption attributes that farmers and consumers prefer. Crop improvement continues, developing varieties with ever-higher levels of vitamins and minerals that are adapted to a wide range of agro-ecological conditions, and ensuring that the best germplasm for climate-adaptive as well as food-quality traits continues to be used in breeding biofortified crops. Biofortified germplasm and nutrient-rich breeding lines are being made available as public goods to national governments, which can test and further improve these materials for subsequent official release as new crop varieties.

Monitoring data to date reveal that in HarvestPlus target countries (including Bangladesh, DRC, India, Nigeria, Pakistan, Rwanda, Uganda, Zambia) more than 4 million farming households have been reached by HarvestPlus or its partners with biofortified planting material since 2012. This figure can be considered as a lower bound as it doesn't include (a) the delivery conducted by other organizations (such as the International Potato Center, CIP, which delivers vitamin A OSP) and by the national governments (e.g., Brazil and China), and (b) the households who receive biofortified planting material through diffusion channels (such as through their social networks or through purchases of grains in local markets to be used as planting material). However, over the four years, there might also be a number of farmers who were counted more than once as they have repeatedly received biofortified seed over multiple seasons. Hence, the cumulative total figure of about 4 million households reached is to be seen as an estimate.

*Evidence*

**Efficacy** trials for vitamin A OSP (van Jaarsveld et al. 2005; Low et al. 2007), vitamin A orange maize (Palmer et al. 2016; Gannon et al. 2014), vitamin A yellow cassava (Talsma et al. 2016), iron pearl millet (Finkelstein et al. 2015; Scott et al. 2014; Pompano et al. 2013), and iron beans (Luna et al. 2015; Haas et al., 2016) provide promising evidence that biofortification improves micronutrient status among target populations.

**Effectiveness** evidence on vitamin A OSP showed that OSP delivery had significantly increased vitamin A intake among children and women, and measurably improved vitamin A status among some children, with a 9.5 percent reduction in the prevalence of low serum retinol (Hotz et al. 2012a). In Mozambique, where the delivery of OSP doubled vitamin A intakes, with OSP providing almost the entire total vitamin A intake for children (Hotz et al. 2012b), consumption of OSP was also found to reduce the prevalence and duration of diarrhea among children (Jones and de Brauw 2015). Among children who consumed OSP, the prevalence of diarrhea was 11.5 percentage points lower for children younger than five, and 19 percentage points lower for children younger than three, compared with children who did not consume OSP. Similarly, children who consumed OSP suffered from less diarrhea—0.6 days (for those younger than five) to 1.3 days (for those younger than three) less per week—than children who did not consume OSP (Jones and de Brauw 2015). These results reveal that biofortification could improve child health (Jones and de Brauw 2015). Effectiveness evidence on iron beans is currently being built.

**Acceptability** of biofortified crops and food by farmers and consumers is also studied. Consumer acceptance research on biofortified foods (e.g., please see Chowdhury et al., 2011 for vitamin A OSP; Meenakshi et al 2012 and Banerji et al., 2013 for vitamin A orange maize; Talsma et al., 2013 and Oparinde et al., 2016a for vitamin A yellow cassava; Oparinde et al., 2016b for iron beans and Banerji et al., 2016 for iron pearl millet - majority of these papers and more is synthesized in Birol et al., 2015) revealed that biofortified foods are liked by target consumers, as expressed either in terms of consumer valuation (captured as willingness to pay) or in terms of their sensory evaluation (captured through hedonic rating with 5 or 7 point Likert scales), in some cases even in the absence of information about their nutritional benefits, though information and awareness campaigns often have an important role to play. This finding is important for proving the acceptability of both vitamin A biofortified crops – which change colour and some other organoleptic characteristics due to their beta carotene content, as well as for mineral-fortified crops, which don't have any visible changes, and hence may not be considered as more nutritious than their conventional counterparts. Farmer acceptance of biofortified crops are studied through farmer field day evaluation, farmer feedback and impact assessment studies (see e.g., Karandikar et al., 2013 for iron pearl millet in India; Asare-Marfo et al., 2016 and Murekezi et al., 2013 for iron beans in Rwanda, and Chibwe et al., 2013 and Tedla Diressie et al., 2016 for orange maize in Zambia) which also revealed that farmers liked the various production, processing and consumption traits of these varieties, as much as, if not more than the other varieties they commonly grew.

*Knowledge gaps*

Evidence on the acceptability, efficacy & effectiveness of zinc crops is currently being built. There is also a need to further evaluate the impact (i.e., success) of different delivery and demand creation strategies against their costs and document the lessons learnt from these strategies.

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## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Private Sector Mechanism of the UN Committee on Food Security		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P32A Innovation for Sustainability and Productivity</i>		
Description of the issue <i>in less than 5 lines</i>	In the face of a rapidly growing global population and the increasingly severe consequences of climate change, new approaches, techniques, and technologies will need to be developed to successfully combat hunger and malnutrition. Achieving a world free from hunger and delivering on the promise of the SDGs will depend on our capacity to mobilize the innovative potential of all development actors.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	If the world is to secure the increases in agricultural productivity required to produce enough food for the growing population, greater emphasis is needed on the role of agricultural research and the development of appropriate and adapted technologies to farmers, integration with traditional knowledge, and capacity-building.		

Main response proposed to address the issue	An HLPE report on this topic will help to clarify the challenges and successful approaches related to fostering agricultural research and development, enabling successful provision of extension services, and arming food producers and processors with the knowledge and tools they need to transform the agricultural sector to meet the changing needs of the world's hungry. This includes the important communities of women and youth. It will also lay a solid basis
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	for the elaboration of policies and recommendations to facilitate these outcomes.
Main actor(s) concerned or involved in the response proposed	International organizations, governments, private sector, civil society, farmers, and academia.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	<i>Classification (**)</i>			
1753. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				
1754. Breadth: Are there many people affected?				
1755. Scale: local/national/regional/global?				<b>Global</b>
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

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1756.	Impact on Availability			
1757.	Impact on Access			
1758.	Impact on Utilization/ nutrition			
1759.	Impact on Stability			
1760.	Impact on most vulnerable people	Specify as appropriate		
1761.	Impact on women			
1762.	Impact on children			
1763.	Impact on marginalized populations	Specify as appropriate		
1764.	Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	<b>Low</b>	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>153</sup>

<sup>153</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

Innovation is important to achieve all the SDGs and is specifically called out in Goal 9 of the SDGs: Build resilient infrastructure, promote sustainable industrialization and foster innovation

Targets under Goal 9 include:

- Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending
  - Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States 18
  - Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities
- Further, Target 2.3 cites the need to increase agricultural productivity.

#### **7. The case being, linkages with any other issue**

#### **8. Additional Supporting Information**

*Additional information*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Evidence*

*Knowledge gaps*

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	<b>Private Sector Mechanism of the UN Committee on Food Security</b>		
Do you answer on behalf of your institution, or as an individual?	<b>On behalf</b>		
Do you agree if this contribution is made available to the public as part of the proceedings?	<b>Yes</b>		
Country of the responding individual/institution Please mention international or regional, the case being	<b>International</b>		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P32B Stunting</i>		
Description of the issue <i>in less than 5 lines</i>	Stunting continues to be one of the most pernicious and widespread forms of malnutrition, having a disproportionate impact on the most vulnerable populations compared with other types of malnourishment. It has significant consequences for both human health outcomes, and social and economic outcomes.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b>Challenge</b>	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	The effects of stunting last a lifetime: impaired brain development, lower IQ, weakened immune systems, and greater risk of serious diseases like diabetes and cancer later in life. Beyond the individual impacts of this problem, stunting is an enormous drain on economic productivity and growth. Economists estimate that stunting can reduce a country's GDP by as much as 12%.		
Main response proposed to address the issue	The CFS should focus its efforts in the scope of the workstream on nutrition on addressing this issue. This could be done through the organization of a special event during the 2016-17 intersessional period, or by the initiation of a policy convergence process to produce a set of recommendations. Both approaches would be in line with 2016-17 Workplan of the OEWG on nutrition, as well as the decision box endorsed at CFS43.		

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Main actor(s) concerned or involved in the response proposed

International organizations, governments, private sector, civil society, farmers, and academia.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

		Classification (**)			
1765.	Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				
1766.	Breadth: Are there many people affected?				
1767.	Scale: local/national/regional/global?				Global
		Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)					
1768.	Impact on Availability				
1769.	Impact on Access				
1770.	Impact on Utilization/ nutrition				
1771.	Impact on Stability				
1772.	Impact on most vulnerable people	Specify as appropriate			

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1773. Impact on women			
1774. Impact on children			
1775. Impact on marginalized populations	Specify as appropriate		
1776. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>154</sup>

<sup>154</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



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First indicate the most relevant SDG and, the case being, links existing with other SDGs

This topic is directly related to SDG target 2.2: *By 2030 end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under five years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons.*

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Private Sector Mechanism of the UN Committee on Food Security</b>		
Do you answer on behalf of your institution, or as an individual?	<b>On behalf</b>		
Do you agree if this contribution is made available to the public as part of the proceedings?	<b>Yes</b>		
Country of the responding individual/institution Please mention international or regional, the case being	<b>International</b>		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P32C Engaging, Recruiting, and Retaining Youth in Agriculture</i>		
Description of the issue <i>in less than 5 lines</i>	Human capital and talent are critical drivers of growth, sustainability and security across the entire food chain. There is a need to recruit new talent, particularly youth, to agriculture. There is a lack of appropriately-trained people in the agriculture sector which contributes to food and nutrition insecurity.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b>Challenge</b>	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Considering that the world will need to feed nine billion people by 2050, a 70% increase in global agricultural production is crucial. This scenario demands a suitable labor force, with adequate education and training able to transform agriculture into a more productive, sustainable, competitive and efficient sector. However, the quantity of farmers has declined globally, from 35 to only 4.2 percent of workers in developed countries between 1950 and 2010, and from 81 to 48.2 percent in developing ones.		

Main response proposed to address the issue	This workstream would contribute to identify the areas where actions are needed, through multi-sectorial policy approaches and inclusive mechanisms that engage civil society, private sector, universities and research institutions. It could also foster convergence by creating policy recommendations to encourage the engagement of youth in agriculture. The CFS also could hold a special panel to look at programmes at the national and regional level to promote youth in agriculture and foster greater cooperation among actors
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	working on youth programming.
Main actor(s) concerned or involved in the response proposed	International organizations, governments, private sector, civil society, farmers, and academia.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			Both. The limited engagement, recruitment and retention of youth in agriculture is due to challenges within the food system (disinvestments in extension programs and agriculture education), and outside, such limited infrastructure, and a big disconnection between agriculture education and the marketplace which ultimately leads to high unemployment rates.

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue	X	X			
Nature of the main impact of the issue on FSN	X				

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The issue addresses unemployment, and the centrality of education and skills to sustain food production in the face of the vagaries of weather, climate change, political instability, market volatility, and increasing pest pressures. It also addresses the perception that young people have on agriculture as a real possibility for their careers.

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

### 3. Attributes of the Issue

	<b>Classification (**)</b>			
1777. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?				<b>Systemic issue</b>
1778. Breadth: Are there many people affected?				<b>Many</b>
1779. Scale: local/national/regional/global?				<b>Global</b>
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1780. Impact on Availability			
1781. Impact on Access			
1782. Impact on Utilization/ nutrition			
1783. Impact on Stability			
1784. Impact on most vulnerable people	Specify as appropriate		
1785. Impact on women			
1786. Impact on children			
1787. Impact on marginalized populations	Specify as appropriate		
1788. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

### 5. Degree of confidence

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Solidity of currently available knowledge base.

**Low**

Middle

High

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 6. Linkages with SDGs (1 to 17)<sup>155</sup>

First indicate the most relevant SDG and, the case being, links existing with other SDGs

This topic is related to SDG target 2.1: by 2030 end hunger and ensure access by all people, in particular the poor and people in vulnerable situations including infants, to safe, nutritious and sufficient food all year round.

As well as SDG target 4.7: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.

As well as Goal 8: Promote inclusive and sustainable economic growth, employment and decent work for all.

## 7. The case being, linkages with any other issue

## 8. Additional Supporting Information

*Additional information*

<sup>155</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Evidence*

*Knowledge gaps*

*References*

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## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Ben Robinson, Private Sector Mechanism of the UN Committee on Food Security</b>		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P32D Food Safety</i>		
Description of the issue <i>in less than 5 lines</i>	Food safety has a tremendous impact on food security, nutrition and health outcomes. Many populations lack access to safe food. Overall food production is not sufficient if the food is not safe to eat.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b>Challenge</b>	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	An estimated 600 million people fall ill after eating contaminated food and 420 000 die every year, resulting in the loss of 33 million healthy life years (DALYs). Children under 5 years of age carry 40% of the food borne disease burden, with 125 000 deaths every year. (source: WHO) Farmers who have product rejected due to food safety issues face loss of income and unsafe food creates a waste stream with environmental consequences.		

Main response proposed to address the issue	CFS has helped to advance the discussion of food systems, expanding the understanding that food production and nutrition are linked. Food safety is cited in the SDGs but has received relatively little attention compared to total caloric food security and to nutrition. Studies on the impact of food safety have been conducted, as well as standard setting, and measures to treat food borne diseases. CFS can assist by reviewing interventions that can help to improve food safety with positive consequences on social, economic and environmental impact.
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Main actor(s) concerned or involved in the response proposed

All stakeholders, including the public sector, the private sector, civil society, farmers, and academia

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1789. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1790. Breadth: Are there many people affected?	Few		Many	
1791. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1792. Impact on Availability				
1793. Impact on Access				
1794. Impact on Utilization/ nutrition				
1795. Impact on Stability				

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1796. Impact on most vulnerable people	Specify as appropriate		
1797. Impact on women			
1798. Impact on children			
1799. Impact on marginalized populations	Specify as appropriate		
1800. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

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**6. Linkages with SDGs (1 to 17)<sup>156</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>156</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

*References*

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## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	<b>Ben Robinson, Private Sector Mechanism of the UN Committee on Food Security</b>		
Do you answer on behalf of your institution, or as an individual?	<b>On Behalf</b>		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P32E Resilient Agricultural Practices in the Context of Disasters</i>		
Description of the issue <i>in less than 5 lines</i>	In the wake of immediate crises such as droughts and floods, Food aid systems are vital, however methods to resume farming, sustain livelihoods, and reinvigorate food production systems are under explored.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b>Challenge</b>	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	The El Nino effect has been yet another stark reminder of the impacts of extreme weather, drought, flooding and the long term implications of climate change on farming. A broad array of countries have been affected this year, with a huge impact on livelihoods, food security, and the need for humanitarian assistance. These recent impacts bely a longer term trend toward more extreme weather and the need for more attention, coherence and analysis on these issues.		

Main response proposed to address the issue	While disaster response has received important and vital attention in UN fora such as Sendai, there has been very little focus specifically on the goals of including practices that increase capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters. This would be a unique place where CFS could add value, drawing attention to the long term importance of resilience. The SDGs as the overarching development framework, specifically call out the need to address adaptation in the face of disasters and this would be a meaningful contribution towards the SDGs.
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Main actor(s) concerned or involved in the response proposed	All stakeholders, including the public sector, the private sector, civil society, farmers, and academia.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			Briefly mention how this may be the case

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	<i>Classification (**)</i>			
1801. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1802. Breadth: Are there many people affected?	Few		Many	
1803. Scale: local/national/regional/global?	Local	National	Regional	Global
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	

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For items 4-11 below, please use the classification [ — — , —, 0, +, ++]:  
Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1804. Impact on Availability	
1805. Impact on Access	
1806. Impact on Utilization/ nutrition	
1807. Impact on Stability	
1808. Impact on most vulnerable people	Specify as appropriate
1809. Impact on women	
1810. Impact on children	
1811. Impact on marginalized populations	Specify as appropriate
1812. Cost to address the issue	Low Middle High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>157</sup>

<sup>157</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

*Knowledge gaps*

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and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Kesteloot Thierry, Oxfam-Solidarity	
Do you answer on behalf of your institution, or as an individual?	With the support of Focus on the Global South and FIAN International.	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	
Country of the responding individual/institution Please mention international or regional, the case being	International. This issue emerged strongly as a critical one during the CSM Forum 2016	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P33A Right to food under increased risk from violence against and criminalization of small-scale food producers, workers and civil society</i>		
Description of the issue <i>in less than 5 lines</i>	Small-scale food producers, workers and their organisations and their defenders are facing increasing pressure by criminal acts, restrictive laws and limited space to assemble, associate and to participate in public affairs. These pose serious threats to the provision of food, the realization of the right to food and food governance from local to global levels.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge		
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Regular reports of violence and criminalization coming from social movements and civil society from different regions, identified as critical during the monitoring of the implementation of the VGGT Reports of the OHCHR and CSM members on the violations of rights to freedom of association and assembly and other human rights. Relevant for the CFS in terms of inclusive rights based food governance. CFS recognizes the priority to give voice to those affected and to small-scale food producers.		

<p>Main response proposed to address the issue</p>	<p>Respect, protect and promote human rights as interdependent, indivisible and interrelated.</p> <p>The realization of the right of association and assembly, and the right to take part in public affairs is critical, in particular for the most marginalized and excluded – who are at the same time the most important contributors for food security and nutrition - to make their voices heard and their views reflected in public policies relevant to food provision so that their right to food will be protected.</p> <p>Ensure good governance on the basis of participation, accountability, non-discrimination, transparency, human dignity, empowerment and the rule of law</p> <p>Ensure good governance with independent judicial systems and redress mechanisms</p> <p>Address structural causes of rights suppression/violations, criminalization, including (economic, political) power concentration, impunity, control over natural resources, inequality and cronyism.</p> <p>Enforce the responsibility of all investors (state, private, corporate) to respect human rights and address the urgent need for access to effective remedy for victims of investment/business related human rights abuses.</p> <p>Pass and enact new laws and/or effectively enforce existing laws that regulate corporations and investors, criminally prosecute and sanction them wherever they commit crimes or impair the human rights of individuals or communities, ensure redress to those affected for damages and prevent repetition of crimes and abuses.</p> <p>Require that companies identify and assess any actual or potential adverse human rights impacts through meaningful consultation with potentially affected groups, as an integral part of their responsibility to respect human rights.</p>
<p>Main actor(s) concerned or involved in the response proposed</p>	<p>Those who are directly and indirectly responsible for violence, criminalization, human rights violations and curtailing space for social actors :</p> <ul style="list-style-type: none"> <li>- States actors from local to global levels, from executive power as well as judicial authorities, police and security forces</li> <li>- Private investors, businesses, corporations and their staff, whose interests lead to conflicts and HR violations</li> <li>- Paramilitary groups, organized crime, private security working to defend private interests</li> <li>- States from countries of origin of investments</li> <li>- Media</li> </ul> <p>Those who are affected and involved in responses :</p> <ul style="list-style-type: none"> <li>- Small scale food producers and their organisations (farmers, Indigenous Peoples, workers, fisherfolks, pastoralists, people in</li> </ul>

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	<p>protracted crises)</p> <ul style="list-style-type: none"> <li>- HR defenders</li> <li>- Civil society</li> <li>- Independent Media and researchers</li> </ul>
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*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Issue mainly external (due to changes in governance allowing force, terror, criminalization; restricting civil society space); but long standing/continuing power inequalities within the food system leading to threats and violence have increased with capitalism and globalization. The principles of a HR based governance is/should be an inherent part of the governance of our food systems.

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	Power concentration and power abuse	Undermining of local food systems; Undermining of local, sub-national and indigenous social organisations Distress migration	Struggle of control over productive resources Environmental pollution	Rights violation; Failing institutions Shrinking space for social actors to participate in public policy, law making, etc.	
Nature of the main impact of the issue on FSN	Undermining the capacity of food producers and workers to produce (availability) and access food; Raising inequalities	Climate of fear; limited freedom of expression; limited diversity of opinion; limited freedom of research and innovation; gender and	Unfair and insecure land/natural resources tenure	Failing participation in food governance; Impunity of HR violation; Weak accountability	

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	and HR violations; no decent work; inefficient allocation of resources for FSN Irresponsible investments	youth exclusion			
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(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

The nature of the issue is by essence transversal, as it touches upon food security and nutrition, human rights, power, governance

### 3. Attributes of the Issue

		Classification (**)			
1813. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?					Systemic issue
1814. Breadth: Are there many people affected?					Several movements and organisations, many people indirectly affected
1815. Scale: local/national/regional/global?		Local <i>Many violations linked to various local conflicts</i>	National <i>Several states take insufficient steps to ensure rights of association/freedom of expression and participation</i>	Regional <i>Most of the regions are confronted with the issue in various forms</i>	Global <i>Some of the most important causal factors</i>
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)					
1816. Impact on Availability	-				
1817. Impact on Access	-Negative: impede access of local people to land, water, forests, productive resources				
1818. Impact on Utilization/ nutrition	-				
1819. Impact on Stability	Very negative: violence, criminalization, rights violations and impunity of offenders create fear, unrest and anger, which in turn can trigger other spontaneous actions that destabilize communities, society and economies.				
1820. Impact on most vulnerable people	Very negative on small scale food producers (peasants, pastoralists, fisherfolks, indigenous peoples, agricultural workers, women, youth)				
1821. Impact on women	Very negative: women and girls face the threat of gender specific violence; in addition to the violence, there are additional restrictions/limitations to girls : access to education, women's abilities to work, etc.				
1822. Impact on children	Negative: criminalization and violence can result in				

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	reduced access of affected communities to food, displacement and distress migration, all of which have long term negative impacts on children.		
1823. Impact on marginalized populations	See all of above.		
1824. Cost to address the issue	Low		

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	
Moment to act to address the issue	X	X	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.		Middle	
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Some cases are largely documented. However these cases might be underestimated due to censorship, fear and oppression among affected peoples, human rights defenders and civil society. Public authorities denying or using a context of terrorism or conflicts to justify criminalization, oppression and limiting civil society space

#### 6. Linkages with SDGs (1 to 17)<sup>158</sup>

<sup>158</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

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First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG 16 : Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Links with SDG1 (poverty eradication), SDG2 (zero hunger), SDG5 (gender equality), SDG8 (inclusive sustainable economic development and decent work), SDG10 (reduce inequalities), SDG15 (Protect, restore and promote sustainable use of terrestrial ecosystems)

## **7. The case being, linkages with any other issue**

- The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT)
- Food Security and Nutrition in Protracted Crises
- The establishment of an innovative monitoring mechanism leading to promote accountability
- The Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security
- Investing in smallholder agriculture for food security and nutrition
- Women's empowerment
- potentially : Multistakeholder Partnerships to Finance and Improve Food Security and Nutrition in the Framework of the 2030 Agenda

## **8. Additional Supporting Information**

### *Additional information*

The worsening trend of violence and repression against human rights defenders and social movements is increasingly linked to an economic model strengthening power concentration of private actors and increased inequalities, undermining people's fundamental rights. States institutions are being coopted by powerful groups and states pay scant attention to fulfilling their obligations to respect, protect and promote human rights.

The intensified competition for natural resources over the last decades has led to multiple economic, social and environmental conflicts all over the world. The recent crises have exposed the vulnerability of the global South countries, which have prioritized resource-based development models to raise their national incomes and pursue economic growth. Much of the demand for the resources in those countries comes from countries in the global North. In a globalized world, the quest for economic growth has resulted in exacerbated conflicts between local communities and business actors and a growing opposition between what could be considered a commodity-based approach, prioritizing economic growth and midterm profits, and rights-based approaches, favouring populations' interests and sustainability. Communities protesting against projects that threaten their very livelihood and existence have often faced stigmatization and attacks from States and corporations, labelling them "anti-development" "anti-national" etc.

The space to exercise peaceful assembly and association rights is often more limited in relation to natural resource exploitation because of the significant impact this sector has on the economies of resource-rich countries, the bottom lines of the enterprises involved and the potential for corruption. Having citizen engagement is, therefore, imperative throughout the decision chain right from the initial stages of the process when exploration potential is determined, through to exploitation activities and investment of revenue. The rights to freedom of peaceful assembly and of association provide the necessary avenues for this engagement.

The majority of the world's workers, including informal, women, domestic, migrant and agricultural workers and day labourers, are often excluded from national legal protective frameworks, leaving them unable to exercise their fundamental rights to associate or assemble, and without access to remedies when their rights are violated. Due to the prevalence of patriarchal culture, women face in particular stronger violence.

Global supply chains are putting downward pressure on wages and working conditions, and distancing workers from their rights to freedom of association because workers fill permanent jobs but are denied permanent employee rights. They are also accelerating environmental pollution and destruction, and creating economic instabilities as businesses/corporations move locations to maximize their profits.

The weakness of democracy and the capture of democratic, governance and justice institutions is, in turn, related to the deficit in civic participation in public matters through, for example: a lack of transparency, control over public opinion, the criminalization of social criticism, the repression of protest movements, etc. The capture of the state is accompanied by the erosion of the political rights of its citizens.

The violence to which human rights defenders are subject, the role of states in maintaining this situation and the special interests that benefit from it prove that states' fundamental function is being distorted in favour of special economic and political interests and discriminatory and exclusive practices. Anyone seeking to challenge this injustice faces, on a daily basis, both the absence of state protection and, in many cases, violence perpetrated by the state itself. This is more visible in cases where economic projects supported by the state are at stake.

In the words of the UN Secretary-General: 'Governments' inability or lack of will to hold these entities to account for the acts they have committed against human rights defenders has increased the vulnerability of the latter and has strengthened the general perception that it is possible to violate human rights with impunity.'

#### *Evidence*

The Global Witness Report identified 185 killings of HR defenders in 2015 across 16 countries, a 59% increase compared to 2014. The Front line defenders reports that : 45 % of the 156 defenders killed in 25 countries in 2015 were defenders of environmental, land and indigenous people's rights.

A report by Amnesty International states that the most common forms of attack are those against personal life and integrity; gender violence; punishments for exercising the right to freedom of expression, association and peaceful assembly; harassment; threats; stigmatization; smearing and attacks on reputation; and criminalization and prosecution.

The increased scale of acts of reprisals against movements protesting against the environmental harm of projects funded by international financial institutions (IFIs) is increasing. There are large gaps between professed commitments to participation and accountability and the situation on the ground, pointing to an overwhelming failure by IFIs to assess risks and respond to reprisals effectively. Among others, case studies in Cambodia, Ethiopia, India, Uganda and Uzbekistan documented reprisals taking a variety of forms. The critics of World Bank Group-funded projects were reportedly the target of threats, intimidation tactics and baseless criminal charges

Many regional organisations, such as Focus on the Global South in Asia, are documenting and raising alerts about the abuse of rights, violence and criminalization of small scale food producers, workers, indigenous peoples and local communities, highlighting their links with economic motivations.

The expansion of economies based on exports of commodities in the region and the spreading of mega-projects and their socio-environmental and territorial impact is provoking an increase in human rights violations that is sustained by government actions or omissions. These government actions, for example, do not respect the right to free, prior and informed consent (FIPC), and have a profound impact on indigenous and rural communities. Finally, it is alarming to see how passive the region's governments are being; both by neglecting their internal role as guarantors of rights, and by limiting the action of international human rights mechanisms. The recent financing crisis within the Inter-American Commission on Human Rights and the Inter-American Court is a clear example.

In this context, of particular concern is the situation of women human rights defenders, who, in a predominantly patriarchal environment are suffering an intensification of violence against them. In Latin America it means that women human rights defenders face specific risks and attacks, since their activities involve them challenging cultural, religious and social norms. This means that they are victims



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of stigmatization, hostility, repression and violence more frequently and to a greater extent than men. As well as seeking to neutralize their defence of human rights, such attacks reinforce the discriminatory stereotypes that erode respect for their work and their necessary protection; creating the conditions for more violent attacks that ultimately put their lives at risk. This specific aspect of the attacks against women human rights defenders has been recognized by the UN General Assembly, which, in its Resolution of 18 December 2013, expressed its concern about 'the systematic and structural discrimination and violence faced by women human rights defenders and defenders of women's rights', asking that governments draw up and implement specific gender policies to guarantee their protection.

Indigenous communities also face multiple forms of aggression and violence. In specific situations, oppression against them is encouraged by institutionalized racism and stigmatization that deny the rights of these communities. Private actors such as agribusiness, extractive industries as well as law enforcement agencies have been regularly observed to commit violations against indigenous communities. National development strategies often fail to include specific approaches and processes for indigenous communities that would ensure the conservation of their ancestral lands and recognize their rights to their livelihoods and environment. Linguistic barriers, countless obstacles to access basic social services, the imposition of unfavourable models of consultation aggravate the vulnerability of indigenous EHRDs.

#### *Knowledge gaps*

The scale of the problem and the effects it has on the progressive realization of the right to food.

What are the trends in the causal factors to the problem?

In which different ways this affects FSN ?

What are the main obstacles to ensure the protection of social movements and human rights defenders and their participation in public affairs, and to promote accountability?

What are the effective measures to address the issue

#### *References*

- CSM, Synthesis report on civil society experiences regarding the use and implementation of the Tenure Guidelines and the challenge of monitoring CFS decisions, 2016, [http://www.csm4cfs.org/wp-content/uploads/2016/09/CSM-Monitoring-Report-VGGT-final1\\_EN-1.pdf](http://www.csm4cfs.org/wp-content/uploads/2016/09/CSM-Monitoring-Report-VGGT-final1_EN-1.pdf)
- UNGA, Situation of human rights defenders, note by the Secretary-General, 2016, A/71/281
- UNHRC, Report of the Special Rapporteur on the rights and freedom of peaceful assembly and association, Maina Kiai, , 2015, A/HRC/29/25
- UNHCR, Report of the Special Rapporteur on the rights and freedom of peaceful assembly and association, Maina Kiai, , 2016, A/HRC/71/385
- Global Witness, On Dangerous Ground, 2016
- Front Line Defenders, Annual Report 2016: Stop the Killing of Human Rights Defenders (2016)
- <https://www.icij.org/project/world-bank/world-bank-does-little-villagers-threatened-and-jailed-protesting-big-projects>
- Focus on the Global South: "When Murder and Abuse Become Systemic" Newsletter Volume III, Volume 4, August 2016 <http://focusweb.org/content/newsletter-volume-iii-number-4-august-2016>
- Amnesty International, Defending human rights in the Americas: necessary, legitimate and dangerous. (2014)
- Oxfam Briefing note, The risks of defending human rights, Oct 2016

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## HLPE Inquiry Critical and Emerging Issues for Food Security and Nutrition Questionnaire

(Please fill a separate form for each issue identified)

### About the respondent

Name, Surname and Institution	Andi Sharma, Government of Manitoba		
Do you answer on behalf of your institution, or as an individual?	On behalf	As individual	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	No	
Country of the responding individual/institution Please mention international or regional, the case being	Canada – Regional (Province of Manitoba)		

### 1. Overview of the issue

Issue <i>in 2 lines</i>			
Description of the issue <i>in less than 5 lines</i>	P34A Climate change and the affect on Indigenous food security		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>			

Main response proposed to address the issue	
Main actor(s) concerned or involved in the response proposed	

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	External – climate change is exogenous		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue			The warming of the winters has lead to changing patterns in the herds typically hunted by northern Canadian Indigenous communities		
Nature of the main impact of the issue on FSN			Remote indigenous communities in the north are finding it more and more difficult (sometimes impossible) to rely on their traditional food systems; in the absence of which they rely on monopoly retailers if there is even a service provider in the north.		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1825. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1826. Breadth: Are there many people affected?	Few		Many	
1827. Scale: local/national/regional/global?	Local	National	Regional	Global

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

			Global Northern regions above the 54 <sup>th</sup> parallel
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For items 4-11 below, please use the classification [ — — , — , 0, +, ++]:

Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)

1828. Impact on Availability	— —
1829. Impact on Access	— —
1830. Impact on Utilization/ nutrition	—
1831. Impact on Stability	— —
1832. Impact on most vulnerable people	— — (Indigenous peoples)
1833. Impact on women	—
1834. Impact on children	
1835. Impact on marginalized populations	— — (Indigenous Peoples)
1836. Cost to address the issue	Low Middle High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact		X	
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Already seeing affects with respect to herd migration patterns – will only get worse

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Canada and other arctic research bodies have done precious little research on this.

**6. Linkages with SDGs (1 to 17)<sup>159</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

SDG #2

SDG #13

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

**Aboriginal Food Security in Northern Canada: An Assessment of the State of Knowledge**

<sup>159</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

How climate change is affecting northern and remote indigenous communities

*References*

Power, Elaine M. "Conceptualizing food security for Aboriginal people in Canada." *Canadian Journal of Public Health/Revue Canadienne de Sante'e Publique* (2008): 95-97.

Furgal, Christopher, and Jacinthe Seguin. "Climate change, health, and vulnerability in Canadian northern Aboriginal communities." *Environmental health perspectives* (2006): 1964-1970.

Chan, Hing Man, et al. "Food security in Nunavut, Canada: barriers and recommendations." *International Journal of Circumpolar Health* 65.5 (2006).



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	<b>Sue Longley, IUF</b>		
Do you answer on behalf of your, or as an individual?	Institution = International Union of Food, Agricultural, Hotel, Restaurant, Tobacco and Allied Workers Associations (IUF)		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P35A How poverty wages and poor working conditions deny plantation workers food security and nutrition.</i>		
Description of the issue <i>in less than 5 lines</i>	Plantation workers make up half of the agricultural workforce. They are food insecure yet there has been no systematic analysis of their position or of the public policy measures required to improve their food security and nutrition.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>			It depends – both no work done so far so challenge but opportunity to improve lives of millions
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Through its affiliates and own field work the IUF regularly monitors living and working conditions of plantation workers and attempts to negotiate improvements. Case studies have been conducted in particular on living and working conditions of tea plantation workers, many of whom are women. Country progress to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture is hindered by failure to address the FSN needs of plantation workers.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main response proposed to address the issue	Development of policy guidelines to ensure the food security and nutrition of plantations workers. These guidelines would be a tool to ensure policy coherence at national, regional and international levels thus contributing to the achievement of FSN for an large part of the world's workforce.
Main actor(s) concerned or involved in the response proposed	Plantation workers and their trade unions, the IUF, RBA and the ILO.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?			Plantation workers are part of the food system but there are external drivers determining their living and working conditions

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	✓				
Nature of the main impact of the issue on FSN	Poverty wages and poor working conditions undermine the FSN of plantation workers and their families				

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)
1837. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Systemic issue



Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

1838. Breadth: Are there many people affected?				<b>Many</b>
1839. Scale: local/national/regional/global?				Global: all regions with plantations
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1840. Impact on Availability	++			
1841. Impact on Access	++			
1842. Impact on Utilization/ nutrition	+			
1843. Impact on Stability	+			
1844. Impact on most vulnerable people	++			
1845. Impact on women	++			
1846. Impact on children	++			
1847. Impact on marginalized populations	++			
1848. Cost to address the issue	Middle			

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	✓		
Moment to act to address the issue	✓		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

The moment to act is now to assist this long neglected, vulnerable group. Policy coherence to ensure FSN for plantation workers could be worked on/enacted with immediate effect in particular ensuring the right to organize and bargain collectively, a key enabling right.

#### 5. Degree of confidence

Solidity of currently available knowledge base.			High
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However, the knowledge base on the FSN situation of plantations workers is limited eg research by the IUF and its allies and some ILO and FAO studies.

## **6. Linkages with SDGs (1 to 17)<sup>160</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

Most linked to SDG 8 (decent work & economic growth)  
but also linked to SDGs 1 (no poverty) , 2 (zero hunger) & 5 (gender equality).

## **7. The case being, linkages with any other issue**

This is a persistent but overlooked issue.

The proposed theme would contribute to the achievement of CFS overall objective to strive for a world without hunger and contribute to the progressive realization of the rights to adequate food, by focusing on of the most affected groups and public policies to ensure their food security and nutrition. Plantation workers are without any doubt one of these large social groups most affected by hunger and malnutrition. There is an evident and urgent need for public policies for ensuring their food security and nutrition.

The CFS Global Strategic Framework, the CFS adopted recommendations on fisheries, water and livestock all contain references to food and agricultural workers' rights but there is no consolidated examination of the FSN situation of plantation workers.

## **8. Additional Supporting Information**

IUF et al. 2014, Harvesting Hunger. Plantation Workers and Their Right to Food,  
<http://www.iuf.org/w/sites/default/files/2014%20Harvesting%20Hunger.pdf>;

IUF 2015: If water is life...why do agricultural workers die every year from lack of access to potable water? <http://www.iuf.org/w/sites/default/files/If%20water%20is%20life.pdf>

IUF & FIAN A life without dignity – the price of your cup of tea (2016)  
[http://www.iuf.org/w/sites/default/files/FFMFINALReport\\_160616\\_web.pdf](http://www.iuf.org/w/sites/default/files/FFMFINALReport_160616_web.pdf)

<sup>160</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Women make up over 40% of the agricultural workforce but there are not clear statistics on their role in plantations. On tea plantations in India they are about 70% of the workforce.

Children work in commercial agriculture (ILO estimates about 1 in 5 of the 165 million child labourers in agriculture work in commercial agriculture).

There are clear indications that barriers (legal, physical and psychological) to the self-organization of plantation workers and small farmers into organizations that can collectively defend their interest hamper the ability of both groups to achieve their rights to food security and nutrition.

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#### *References*

*ILO 2008, Rural employment for poverty reduction in particular the chapter on closing the gaps for rural workers:*

[http://www.ilo.org/wcmsp5/groups/public/---ed\\_norm/---relconf/documents/meetingdocument/wcms\\_091721.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_091721.pdf)

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Randy Duckworth, Global Pulse Confederation		
Do you answer on behalf of your institution, or as an individual?	On behalf		
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes		
Country of the responding individual/institution Please mention international or regional, the case being	International		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P36A Pulse Research for Food Security and Nutrition</i>		
Description of the issue <i>in less than 5 lines</i>	As FAO has attested by declaring 2016 as the International Year of Pulses, the potential impacts of pulses for food security and nutrition are substantial. However, there is an urgent need to promote scientific research that would allow pulse crops to deliver on their full potential as a critical player to eliminate hunger.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	Challenge	Opportunity	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	The Morocco Declaration shone a spotlight on the unmet potential of pulse crops to deliver food and nutrition security, agricultural sustainability, and reduced climate change risks, while contributing to the economic empowerment of the rural poor. Global pulse crop production has remained relatively stagnant, and the science of pulse agriculture is markedly underdeveloped compared to other staple crops. The 13 pulse crops receive just USD 175 million in research funding annually, a tiny fraction of the USD 61 billion directed toward global food and agriculture research.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at [cfs-hlpe@fao.org](mailto:cfs-hlpe@fao.org)

Main response proposed to address the issue	The mandate for the International Year of Pulses is to encourage connections throughout the food chain that would better utilize pulse-based proteins, to further global production of pulses, to increase the efficiency of crop rotations, and to address trade challenges. The pulse research community plays several critical roles in meeting this mandate. Investing in research can increase pulse productivity, quality, and resilience. International agreement on strategic research priorities is needed, specifically, convergence among pulse research stakeholders regarding priority research gaps and transformative scientific investments. By demonstrating consensus on priority investments, setting an agenda for global action, and mobilizing champions to advocate for funding, essential pulse research investments can be accelerated.
Main actor(s) concerned or involved in the response proposed	International organizations, governments, private sector, civil society, farmers, and academia.

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	<i>External driver</i>	<i>Internal to food systems</i>	<i>Both</i>
Is the issue either or both?			

(*)	<i>Economic (and productive)</i>	<i>Social (and Cultural)</i>	<i>Environmental (resources, etc.)</i>	<i>Governance (institutions, rights, etc.)</i>	<i>Other (SPECIFY)</i>
Main nature of the issue					
Nature of the main impact of the issue on FSN					

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	<i>Classification (**)</i>
1849. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	<b>Systemic issue</b>
1850. Breadth: Are there many people affected?	<b>Many</b>

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1851. Scale: local/national/regional/global?				<b>Global</b>
	<i>Indicate here the precise location</i>	<i>Indicate here the precise country</i>	<i>Indicate here the precise region</i>	
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1852. Impact on Availability				
1853. Impact on Access				
1854. Impact on Utilization/ nutrition				
1855. Impact on Stability				
1856. Impact on most vulnerable people	Specify as appropriate			
1857. Impact on women				
1858. Impact on children				
1859. Impact on marginalized populations	Specify as appropriate			
1860. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact			
Moment to act to address the issue			

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with SDGs (1 to 17)<sup>161</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

**7. The case being, linkages with any other issue**

**8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>161</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

*References*





## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Welthungerhilfe (WHH) Germany	
Do you answer on behalf of your institution, or as an individual?	On behalf	individual
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	no
Country of the responding individual/institution Please mention international or regional, the case being	Based in Germany, working internationally (Africa, Asia, Caribbean, Latin America)	

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P37A Consequences of current "Mega Mergers" as a major threat for world's food security</i>		
Description of the issue <i>in less than 5 lines</i>	In the context of an ever-increasing centralization of power within the food system (often referred to as mega-mergers) it is very likely that in the coming years two thirds of global seed and pesticide sales will be controlled by three companies. Due to this rising monopolization, small holder farmers will depend even more on the prices set by a few very influential companies.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<b>Challenge</b>	<b>Opportunity</b>	It depends (please specify)
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines.</i> Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.	<p>As a civil society organization we are currently not able to estimate the economic impact of these mergers. Nevertheless, we are very concerned about the possible consequences on food and nutrition security. In recent years we have already witnessed high market concentration at the expense of small holder farmers, for example the dependence on expensive, non-reproductive seed is a dangerous threat to the livelihood of the most marginalized and vulnerable people, esp. in developing countries.</p> <p>Furthermore, there is a strong concern that multi-national corporations will have the potential to extend the provision of genetic modified seeds and dangerous chemicals and also intensely grow monocultures that effect the biodiversity as well as the right to land – which will present a significant challenge for the food security smallholder farmers.</p> <p>As the right to food is part of the core mandate of the CFS, conducting an impact assessment by the</p>		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

	HLPE that provides scientific data would be vital to assess the ongoing concentration process properly.
Main response proposed to address the issue	Conduct research in order to formulate evidence based policy recommendations
Main actor(s) concerned or involved in the response proposed	NGOs, social movements/ small holder representatives, public opinion, governmental representatives

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	X		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x		x	x	
Nature of the main impact of the issue on FSN	x		x	x	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)	
1861. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point	Systemic issue
1862. Breadth: Are there many people affected?	Few	Many

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

1863. Scale: local/national/regional/global?	Local <i>Indicate here the precise location</i>	National <i>Indicate here the precise country</i>	Regional <i>Indicate here the precise region</i>	<b>Global</b>
For items 4-11 below, please use the classification [ — — , —, 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1864. Impact on Availability				
1865. Impact on Access				
1866. Impact on Utilization/ nutrition				
1867. Impact on Stability				
1868. Impact on most vulnerable people	Rising food prices			
1869. Impact on women				
1870. Impact on children				
1871. Impact on marginalized populations	Rising food prices			
1872. Cost to address the issue	Low	Middle	High	

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<i>Timeframe (*)</i>	<i>Now/Short term (1-5 years)</i>	<i>Medium term (5-10 years)</i>	<i>Long term (10-20 years +)</i>
Moment when the issue will have an impact	X	X	X
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	<b>Low</b>	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation: More data / estimations needed

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

**6. Linkages with SDGs (1 to 17)<sup>162</sup>**

First indicate the most relevant SDG and, the case being, links existing with other SDGs

- 1.) SDG 2
- 2.) Strong linkage with SDG 1
- 3.) Linkages also with SDG 13 and SDG 15

**7. The case being, linkages with any other issue**

Bio diversity, right to land

**8. Additional Supporting Information**

*Additional information*

*Evidence*

<sup>162</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*Knowledge gaps*

*References*



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

### Questionnaire

(Please fill a separate form for each issue identified)

#### About the respondent

Name, Surname and Institution	Richard Haep, Welthungerhilfe		
Do you answer on behalf of your institution, or as an individual?	On behalf	<del>As individual</del>	
Do you agree if this contribution is made available to the public as part of the proceedings?	Yes	<del>No</del>	
Country of the responding individual/institution Please mention international or regional, the case being	Based in Germany, working internationally (Africa, Asia, Caribbean, Latin America)		

#### 1. Overview of the issue

Issue <i>in 2 lines</i>	<i>P37B Small holder farming families and correlation to nutritional and socioeconomic indicators/indexes</i>		
Description of the issue <i>in less than 5 lines</i>	Representation of small holder farming families (SHFF) in Peru to socioeconomic and nutritional indicators indicates their overrepresentation and correlation to exclusion, suggesting approaches to overcome exclusion as promising to overcome food insecurity and malnutrition.		
Is the issue a <i>challenge</i> and/or an <i>opportunity</i> for FSN? <i>Please tick the appropriate box</i>	<del>Challenge</del>	Opportunity	<del>It depends (please specify)</del>
Methodology and approach used to identify the issue and assess its importance for Food Security and Nutrition  <i>In less than 10 lines. Additional supporting or describing information (literature, reports, expert report, analysis, etc.) can be provided in section 8 below.</i>	Chronic malnutrition amongst children under 5 (stunting) was correlated to income, access to public services, as well as percentage of economically active population in agriculture in each of the 25 departments of Peru. Family Farmers were characterized according using official statistics from the National Statistical Institute and the Agricultural Census. Malnutrition is highly concentrated in farming families and requires multidimensional approach, focusing on social and economic inclusion.		
Main response proposed to address the issue	The study carried out in Peru should be expanded and repeated in other countries in order to better identify who are the hungry, where they are and how they can be characterized. Correlation to an Index of Exclusion and its components may lead to new insights how government programs to overcome hunger and malnutrition could look like.		

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

Main actor(s) concerned or involved in the response proposed

National and local governments, Ministries of Health, Education, Agriculture/ Nutrition, Public Services, Public Investment in Basic Infrastructure and Services, Donors and NGO

*For the public inquiry fields below are optional*

## 2. Broad typology of the issue

(*)	External driver	Internal to food systems	Both
Is the issue either or both?	x		Briefly mention how this may be the case

(*)	Economic (and productive)	Social (and Cultural)	Environmental (resources, etc.)	Governance (institutions, rights, etc.)	Other (SPECIFY)
Main nature of the issue	x	x		x	
Nature of the main impact of the issue on FSN				x	

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

## 3. Attributes of the Issue

	Classification (**)			
1873. Depth: Is it relevant to food and nutrition systems as a whole, or to specific parts of those systems?	Critical point		Systemic issue	
1874. Breadth: Are there many people affected?	Few		Many	
1875. Scale: local/national/regional/global?	Local	National	Regional	Global
	Indicate here the precise location	Indicate here the precise country	Indicate here the precise region	
For items 4-11 below, please use the classification [ — — , — , 0, +, ++]: Very negative (— —) / Negative (—) / Low (0) / Positive (+) / Very positive impact (++)				
1876. Impact on Availability				
1877. Impact on Access	++			
1878. Impact on Utilization/ nutrition				
1879. Impact on Stability	++			

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

1880. Impact on most vulnerable people	++ Specify as appropriate		
1881. Impact on women	++		
1882. Impact on children	++		
1883. Impact on marginalized populations	++ Specify as appropriate		
1884. Cost to address the issue	Low	Middle	High

(\*\*) Please tick the boxes or classify the impacts and provide synthetic data where required. Additional supporting or describing information, data, sources can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 4. Time Scale

<b>Timeframe (*)</b>	<b>Now/Short term (1-5 years)</b>	<b>Medium term (5-10 years)</b>	<b>Long term (10-20 years +)</b>
Moment when the issue will have an impact	X		
Moment to act to address the issue	X		

(\*) Please tick the boxes. Additional supporting or describing information can be provided in section 8 below.

In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 5. Degree of confidence

Solidity of currently available knowledge base.	Low	Middle	High
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In 3 lines maximum, provide, if needed a short explanation/justification of your answer, or any further observation:

#### 6. Linkages with SDGs (1 to 17)<sup>163</sup>

<sup>163</sup> See: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>  
and : [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)



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- 1) SDG 2,
- 2) SDG 1, SDG 6, SDG 10,

**7. The case being, linkages with any other issue**

Economic, social , geographic and educational exclusion  
Budgeting, decentralization and public spending (social security systems, affirmative spending)

**8. Additional Supporting Information**

*Additional information*

Study of Save the children (Unequal Portions, 2016) pointing in the same direction as own investigation

*Evidence*

See PPT attached

*Knowledge gaps*

Similarity of situation in other countries.

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

*References*

See PPT attached:

[http://www.fao.org/fileadmin/user\\_upload/hlpe/hlpe\\_documents/Critical-Emerging-Issues-2016/CEI-2016-P37\\_PPT\\_attachment\\_-\\_Critical\\_Issues\\_FamilyFarming\\_WHH.PDF](http://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/Critical-Emerging-Issues-2016/CEI-2016-P37_PPT_attachment_-_Critical_Issues_FamilyFarming_WHH.PDF)

**2<sup>nd</sup> Extension until 2 December 2016**

Replies to the questionnaire are expected by ~~6 October 2016~~ by e-mail at **cfs-hlpe@fao.org**

## Other Inputs



## HLPE Inquiry

## Critical and Emerging Issues for Food Security and Nutrition

barry barry at nationalalgaeassociation.com  
**National Algae Association**

*O1A Algae research*

**The purpose of this exercise is to help CFS stakeholders prioritize future actions and attention on a limited number of critical policy-relevant areas.**

US taxpayers have spent over \$2.5 billion in algae research for the last 70 years.

**Ensuring food security and nutrition requires, first, understanding many different issues and how they relate to each other, and second, tackling them at different levels in a coordinated way.**

US taxpayers have spent over \$2.5 billion in algae research for the last 70 years.

**Identifying, from an evidence-based perspective, critical and emerging issues in the area of food security and nutrition comes with specific challenges.**

Due to an outdated Congressional Mandate algae researchers at universities have no training in commercialization and deployment.

**issues can emerge specifically due to increased interdependencies.**

Food security and creation of new jobs.

**issues can emerge in the future**

Spirulina high in protein has been around for century's

**contexts are continuously changing and issues vary over time, as well as the knowledge about them,**

Water quality and sources of CO<sub>2</sub>

**evidence-based, rationally inducted and documented inputs on critical and emerging issues for food security and nutrition through the form of a questionnaire (attached), primarily directed to the scientific community as well as to the diversity of knowledge networks and knowledge holders: institutions, organizations, knowledge networks and individuals**

<http://www.foodnavigator-usa.com/Suppliers2/Spirulina-s-bright-future-rests-on-protein-health-and-quality-Experts>

**knowledge on important and emerging issues comes from science and academia, but also from evidence-based knowledge of social actors, and from field practice.**

established facts

**importantly, the HLPE is not inviting opinions or advocacy on issues through the questionnaire but specifically requesting documented evidence in support of the issues brought forward.**

all facts available for decades

a map of the most relevant issues (both opportunities and challenges) in relation to food security and nutrition, from an evidence-based perspective. It

all facts available for decades

**The analytical work will explicitly position the issues in relation to SDG2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture), and to the set of the 17 SDGs and related targets and indicators:**

Since our non-profit started the algae education and production industry we do not offer free consulting

**This work will also aim to describe how the issues are linked to one another, and interact with all the paid for algae research** ~~FAO should know the issues~~

**The analysis will finally consider the issues according to their level of specificity, a quality which we call “granularity”.**

we have offered the FAO algae farming opportunities anywhere in the world for a decade.

**The HLPE StC reiterates its commitment to use this process as a learning exercise, with a view to improving the methodology for the future, in particular to find the best adapted methods to reach other forms of knowledge and other knowledge systems than those based in academia and research institutions.**

while FAO is interested in proving methodology and methods in growing algae for food security and continue to purchase more algae research reports from academia who have have no experience in commercial algae production our members have been successful in commercial production of Spirulina for food with samples and COA's.



## **HLPE Inquiry**

### **Critical and Emerging Issues for Food Security and Nutrition**

**Abdul Rahim Khan**

**R.O/P.I/T.L**

**Post Harvest Research Centre**

**Ayub Agricultural Research Institute**

**Faisalabad-Pakistan**

**Tel: 92-41-9201686**

**Fax:92-41-9201687**

**Cell:0321-6684658**

*O2A Utilization of fertile land for residential and industrialization purpose.*



## **HLPE Inquiry**

### **Critical and Emerging Issues for Food Security and Nutrition**

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*O2B All pre & post harvest problems exist with small farmers who are the major player in the food production.*



## **HLPE Inquiry**

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*O2C Need to introduce corporate farming*





## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

Juvenary E.A. Matagili, Executive Director - FISHERS UNION ORGANISATION - FUO  
(SHIRIKA LA MUUNGANO WA WAVUVI)

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*Telephone: +255 755 876 335 / + 255 784 876 335*

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*Blog: [fishersunion.blogspot.com](http://fishersunion.blogspot.com)*

*O3A Challenges facing fish communities in Tanzania*

# FISHERS UNION ORGANISATION (FUO)

## Shirika la Muungano wa wavuvi

### Fishers Union Organization (FUO)

Fisher Union Organization (FUO) is an outstanding fishers led and community based registered organization in Tanzania with diversity qualifications and huge experiences in promoting and improving primary health care services and sustainable development for small holders fishers, households in fishing communities and Small scale mining at the grass root level. it was established on 21st July 2005 with small scale fishers, youth fishers fishmongers, and service providers within fishing community. the organization was registered on 3rd august 2007 with registration no. 00ngo/1031, made under section 12 (2) of act no. 24 of 2002 in vice president office of Dar-es-salaam Tanzania. since its inception in 2007, the organization has implemented several community projects and acquired a huge donor experiences, track records and trusts due its well defined organizational policies, structure and professionals human resources and committed management team.

since its inception in 2005, the organization has implemented several community projects and acquired a huge donor experiences, track records and trusts due its well defined organizational policies, structure and professionals human resources and committed management team. FVO has well defined financial guidelines and procedures which have been used to insure financial and human resources management for efficiency project implementation. based on the organization trusts and a good history in financial management, FVO has secured funds of more than us \$ 700,000 and implemented more than nine funded projects since is inception. the organization has been financed by the right light from England, lake Victoria basin commission (LVBC) under east Africa community, Ministry of Water, AMREF under global fund for HIV/AIDS/TB and malaria, African community network and commonwealth foundation. the organization has financial guideline and procedure which has been used in financial management to support financial internal control.

the financial guideline has been prepared to accommodate international financial standards and it has been updated to accommodate updates information and procedures. once the funds is secure, the organization is normally open a separate bank accounts (current account) and ensuing receipt to acknowledge funds receipt. the transactions is normally conducted by supporting documents such as requisition forms, payment vouchers, retirement forms, profoma invoice, bid analysis, contracts, receipts, time sheets and petty cash vouchers. Financial reports stipulating all expenditures per approved budget, is prepared by the project accountants and submitted to the management team at the end of every months for initial approval. Quarterly financial reports is also prepared and submitted to the board of directors for approval. Audited financial report both internal and external is prepared annually and approved by the board of directors. bank reconciliations are also maintained per each project and all records is kept in files both manually and computerized. the organization maintain both computerized accounting system (quick book) and manual tools (cash books) which has been used to record transaction.

**It's Vision,** *“To become one of the best development partners in empowering fishers to become prosperous and conserve environment for sustainable development.”*

**Mission** *“is to work and realize a prosperous fishing communities which are economically empowered and access quality community based services for sustainable development”*

## **CHALLENGES FACING FISHING COMMUNITY**

- Decline of fish species due to over fishing, illegal fishing and climate change
- Spread of disease like HIV AIDS due to increase of population in fishing community and lack of education.
- Lack of fairness in industry where fishers sell their fish sometime industrial workers tend to reduce the weight of fish for example fishers know exactly the weight of his/her fishes package but after arrive in industry the weight change and become low.
- Unstable price of fish
- Fishing in the fishing reserve island like Nyamango, Gembale, Zilagula, Yozu, Chemagati, Rubaragazi A na B, Mfulubizi, Lyakanyasi, Nyazune, Chitandele, Bihira,, Ikulu na Itto etc-- which were reserved for forest and fish.
- Lack of education to fishers and fishing community in general for example most of fishers (wajeshi) and fishing camps owners are not educated concerning health, gender and family plan environmental issues on Climate Change, Pollution and Sustainable Use of Natural Resources in the Lake Victoria Region and entrepreneur.
- Lack of review on environmental assessment
- Increase of population in fishing community which lead to environmental degradation and over fishing.

- **Lack of serious review of fishing laws which protect fishers and limit gears ownership for example you can find an industry have many gears than it is recommended.**
- **Fishing hygiene is not in good condition for example there is no enough toilet and bathroom to manage the number of population available in fishing camp factor lead to lack of private between men and women etc.**
- **Increase number of sex workers in fishing community**
- **Violence against women like girl trafficking, women buttering, sexual harassment and rape**
- **No chain of command in fishing sectors that why BMUs and fisheries officers are there but illegal and over fishing continue.**
- **No health insurance to fishers (wajeshi)**
- **Low paid to fishers by their bosses (fishing camp owners).**
- **Lack of strategic plan**
- **Corruption in fishing industry**

### **STRENGTH**

- **FUO manage to educate fishing community about HIV AIDS, gender issue, family planning, entrepreneur and environmental issues.**
- **Managed to conduct different researches concerning environmental problems and problem of overfishing and illegal fishing**
- **Managed to inform government about how fishing industry use fish fillets as an umbrella to process fish mouth which is more expensive than fish fillets**

- **Establishment of solar fishing lamp to replace Karabai which is very cheap to run with no complication and it is lighter four times comparing to Karabai. Also by using solar lamp fishers can fish more fishes.**

## **STRATEGIES TO OVERCOME FISHING COMMUNITY PROBLEMS IN LAKE VICTORIA**

- **To educate fishing community on Climate Change, Pollution and Sustainable Use of Natural Resources in the Lake Victoria Region**
- **Education must be provided to fishers and fishing community concerning tree planting and fish farming to avoid environmental change and lack of fishes in fishing community**
- **Establishment of laws which will stand for the rights of fishers (wajeshi)**
- **Improvement of education in fishing community concerning gender issues, HIV AIDS, entrepreneur, and environmental issues.**
- **Building of toilets and bathroom in fishing camps must be compressor**
- **Education to fishers on how to add value to their fishing products**
- **Mindset change and behavioral change to fishers (wajeshi) concerning issue of sexual intercourse cause to the sex is like food.**
- **Mobile clinic and dispensary should be available in island to save fishing community.**

- **Strengthening the financial capacities and income generation for small-holders fishers and households in fishing communities through VSLA program.**

**HLPE Inquiry****Critical and Emerging Issues for Food Security and Nutrition**

The International Fertilizer Association suggests the following as critical and emerging issues on food security and nutrition

**Barrie Bain - The International Fertilizer Association**

barrie.bain [at] outlook.com

Senior Advisor on UN Affairs

***O4A Access to inputs***

Farmers of all types and sizes require inputs: physical inputs such as seeds, fertilizers), plant protection agents; but also information – planting advice, soil testing, pest and disease analysis, weather information etc; and financial – credit lines and risk management.

Without all these inputs farmers, large and small, subsistence or commercial, cannot operate effectively. Without adequate soil nutrition (through integrated nutrient management) crops cannot thrive. A lack of protection against crop diseases and pests means farmers' crops can be devastated. A lack of accurate weather information can lead farmers to plant when there is insufficient moisture available, leading to a loss of yield and a waste of other inputs. Access to high quality, drought and disease and pest resistant seeds increases farmers' productivity, resilience and income.

Focussing at farmers' access to inputs, with a particular focus on smallholders, in a holistic way should be a key workstream for CFS. It connects with most of the SDG Goals especially goals 1 and 2.



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

The International Fertilizer Association suggests the following as critical and emerging issues on food security and nutrition

**Barrie Bain - The International Fertilizer Association**

[barrie.bain \[at\] outlook.com](mailto:barrie.bain@outlook.com)

Senior Advisor on UN Affairs

#### ***O4B Water management***

Agriculture is the largest user of fresh water and the availability of adequate clean water supplies is essential for producing safe, nutritious food. Agriculture can also be a source of water pollution so it is essential to look at water management in agriculture in a holistic way. Water resource management and water use efficiency in agriculture represent a major challenge, especially with the additional problems caused by climate change. Ensuring sustainable use of water in agriculture helps meet goals 1, 2, 6 and 14 amongst others.



**HLPE Inquiry****Critical and Emerging Issues for Food Security and Nutrition**

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Senior Advisor on UN Affairs

***O4C Innovation in agriculture.***

With a growing population and improving, more varied, diets, it is important that innovation plays a central role in all forms of agriculture, from subsistence farming to large scale-food production. Innovation does not just cover hi-tech precision agriculture using GPS and satellite imagery, it includes the development of equipment for smallholder farmers – soil testing kits, improved hand held equipment and simple improvements in tools. Innovation also includes the development of improved varieties of traditional crops that are drought and disease tolerant. The opportunities are endless to develop agricultural technology to ensure sustainable and productive agriculture that helps farmers produce more with less. Innovation in agriculture contributes to most of the SDGs, especially Goals 1 and 2.



## HLPE Inquiry

### Critical and Emerging Issues for Food Security and Nutrition

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Senior Advisor on UN Affairs

#### ***O4D Climate smart agriculture***

Successful sustainable productive agriculture is climate dependent. Agriculture can also contribute to climate change, but also offers the opportunity for mitigation. Climate smart agriculture not only contributes to sustainable and productive agriculture, it also plays a major role in meeting the targets of the Paris accord. As such it should be a major priority for the CFS.



## **HLPE Inquiry**

### **Critical and Emerging Issues for Food Security and Nutrition**

The International Fertilizer Association suggests the following as critical and emerging issues on food security and nutrition

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Senior Advisor on UN Affairs

#### ***O4E Soil health***

Soils are the key factor in agricultural productivity. The International Year of Soils in 2015 gave long-needed focus on the importance of soils. It is important that this initiative is followed up and a CFS focus on this would be timely.



## HLPE Inquiry

## Critical and Emerging Issues for Food Security and Nutrition

Prof. ALI ABDALRAHMAN  
Ali Aly [ali\\_aa22\[at\]ymail.com](mailto:ali_aa22[at]ymail.com)

### ***O5A The role of civil society and the private sector related to agriculture:***

The world has seen , especially in the last two decades of the last century, the growing interest in civil society and increase the number of civil society organizations , and there are many reasons that led to this increase, including: the inability of the state alone to fill the needs of the community and the spread of the democratic system , globalization and the collapse of the political systems of totalitarianism and the emergence of political and economic transformations , have become globalization imposes itself on everyone. It seemed sector, civil society organizations, play an active role in society and especially in the field of development.

The study of economic and social contribution to the private sector studies concern. It is observed that most of the civil society organizations in general and agriculture in particular, suffer from some chronic problems, which are as follows:

1 weaknesses and deficiencies of individuals belonging to such organizations in achieving an effective role , due to the inability of these individuals to deal with official organizations and the private sector and even with other civil society organizations .

2 the existence of deficiencies and severe weakness in financial resources.

3 sees some individuals belonging to tack civil society organizations , that their incomes in those organizations is the only way the ideological front , and to achieve some personal gain , without having an active role in the revitalization and development of those civic organizations .

4 uncle interesting local government institutions and the private sector, the role of these civic organizations , because they are carried out some of the policies and plans that opposes clearly and certainly the role of civil society organizations. The governmental institutions and the private sector to take from those organizations a tool to achieve some of the goals of its own policy.

The relationship between the role of civil society organizations working in rural areas and improve the quality of life of rural people is a positive relationship and therefore the acceleration of progress, and reduce

poverty and the gap between rural and urban areas and reduce the gap underdevelopment which has become the most prominent features of rural society in developing countries , and activation of popular participation , as it should be that governments adopt alternative policies that will ensure that the civil rights and economic, social and cultural rights of citizens support the rights of citizens, economic, social and cultural development to reduce poverty and to ensure social security and the provision of services , social welfare, health and education and to ensure the right to security of land tenure and adequate housing . The emphasis on the role of civil society need to adopt development programs focused on rural areas.

**Recommendation:**

- 1- That the United Nations organizations and local government institutions and the private sector play an active role through activating the role of civil society organizations more efficient , by emphasizing that in all the discussions and deliberations of formal and informal .
- 2- That the focus of United Nations organizations to further training and activation of individuals belonging to civil society organizations to make them more effective, as well as the development of the art of negotiation for these individuals through their dealings with an organization, international institutions, the official and the local private sector, so that they can attract the attention, and encouragement to deal with civil society organizations civil. In order to deepen the partnership with international organizations on the basis of mutual respect and transparency, and not inconsistent with the independence of the civil organizations renewed roles adopted.
- 3- Has to be the establishment of a special fund to finance civil society organizations, provided that the financing of this fund local and international organizations and the private sector, in addition to some donors to serve civil society.
- 4- Emphasis on private sector participation and scientific research institutions and universities in partnership with the civil society organizations in order to develop the local community towards sustainability.
- 5- To achieve a quantum leap in the work of civil society organizations , to support anti-poverty projects , to encourage them to coordinate and work with other parties concerned with issues of poverty , and the distribution of roles among themselves , and take advantage of the potential and expertise of each other. And emphasize the

**importance of strategic planning for projects geared to combat poverty, and by focusing on one major goal.**

- 6- Approaching destruction of one of the developmental issues and deal with them in an integrated way, through the achievement of the overall advancement of the families in poor communities is limited.**
- 7- Build the capacity of civil society organizations in the projects , in a line parallel to the implementation of specific projects , and thus attach to each of the associations rehabilitation and capacity building on one side, and the implementation of projects rely on teamwork from the other side.**
- 8- Building bridges between research centers and universities and by civil society organizations, on the other hand, with an emphasis on the importance of including the subject of university courses for civil work.**
- 9- Development methodologies and studies civil society sector to become more effective in the detection of obstacles civil action, and propose practical ways to address them.**



## HLPE Inquiry

## Critical and Emerging Issues for Food Security and Nutrition

Prof. ALI ABDALRAHMAN  
Ali Aly [ali\\_aa22\[at\]ymail.com](mailto:ali_aa22[at]ymail.com)

***O5B Food security policies:***

FAO is considered one of the most international and local organizations active, which has an effective role and activist, and in the activation of certain policies, food security, through studies, research and food security projects in the world. Where " Food security exists when all people at all times to access , both physical and economic adequate food , safe and nutritious food to meet dietary needs and food preferences Kate has an active and healthy life ." Implicit in this definition is the recognition that food security is a multi -dimensional , and there have been many formulations of what the components of food security, for example , identified CFS four key dimensions or " pillars" : is to ensure the availability of , if not the production of sufficient quantities of materials food and ensures access to all the families and all individuals within those households have enough resources to get the proper foods (through the production , purchase, free ) . And ensure a nutritious diet. Use when the human body is able to absorb and metabolize food. Diet nutritious and safe, biological and social environment adequate, and appropriate health care to avoid diseases help to make adequate food. Is to ensure stability is maintained when the three pillars of the other with the passage of time.

It has been noted by many experts on the need for a column on environmental sustainability , where patterns of production and consumption of food does not deplete natural resources or the ability of the agricultural system to provide enough food and supports many of the countries in the Middle East and North Africa to support the financial year, prices of basic consumer goods , which support was introduced at an earlier stage back until World War II , but he skipped several attempts to fix it , and since then has taken attributes benefits Permanent . The targeted programs are rare. The range of financial support for food prices from a low of 0.04% in Lebanon and 1.3 % in Egypt, Morocco, and even 2.1% per cent in Syria . But the burdens of global support what is spent on supporting energy prices much higher for some countries: 10% in Yemen 0.9 % in Egypt, and about 5 % in Morocco.

By increasing financial support for food prices, and the imposition of price controls, and the reduction of exports, lowering import tariffs: for example , has been in Morocco lowering tariffs on wheat to about zero , and has also been paying financial support for importers , while allowing Egypt preferential import wheat from different countries . In some countries, such as Lebanon and Egypt, has increased wages and salaries to help consumers overcome the effects of rising prices.

The question now is: Does the rise in food prices to create some opportunities in the long term? Most of the poor are rural, and can rise in food prices when its continuation for years to help increase the income of the poor in rural areas and mobilize the economy. The supply of food emotive issue, so countries in the region feel a real concern about food security. The rise in prices could help accelerate the increase of productivity and increase local agricultural production. However, the issue of water is scarce in some areas, which requires governments to take action to help increase the efficiency of water use as well. This means an increase crop yields by the unit of water. An increase in domestic production to help protect countries from the vagaries and fluctuations in commodity markets. But countries in the region also will need to continue to rely on imports and on global markets in order to ensure the supply of food. They should strengthen their capacity to use: futures markets, options, futures, and other modern tools in order to help meet the needs of food and hedge against the risk of the supply side.

Governments of developing countries better to encourage small-scale agriculture in the new global environment, and what form of special and differential treatment may be required to allow them to do so? "In many cases, the reforms have been achieved" successful "is not in isolation, but as a result of the implementation of policies associated with them. In drawing lessons from the reforms that are seen benefiting groups of food insecurity , or which say the least , and you do not have disadvantaged them , so it is important to identify complementary policies that facilitated the process of adaptation to more productive activities , and any countervailing policies that act to mitigate losses transitional groups is safe and has only faced a clearer understanding of the effects that are often obscured from trade reform on food security is therefore vital if the drivers of further reform to lead to changes for the benefit of disadvantaged and vulnerable groups in poor countries .

It is acknowledged that reforms in sectors other than agriculture, it could have implications far more important both in terms of poverty



reduction, through changes in income levels, and food security. It must focus on the agricultural sector and the impact that could be trade reform in its ability to contribute to the improvement of food security in the context of broader structural changes that result from the reforms. This focus justified by explaining the multiple ways in which agriculture, which they can identify and promote national food security of households. While any trade agreement that alters the balance between trade liberalization and the protection of the particular good or service in the economy, can affect the levels of food security, reform of the relevant agriculture is particularly important for the following reasons:

(1) Agriculture is one of the central contributors to food security in most developing countries; both through its direct contribution to the availability of food, and indirectly as the main engine of economic development and thus improve access to food.

(2) Agriculture is one of the sectors most heavily distorted in many countries, and it has, as a result, has received considerable attention in recent rounds of trade negotiations .

### **Recommendation :**

- 1- Need to be food security policies more dynamic and not static, the increasing global variables such as climate change, and changes in dietary patterns, and human behaviors rapidly, in addition to changes in the compositions crop, which requires change, food security commodities.
- 2- Phase that they key issues in food security policies and sustainable development policies.
- 3- To be involved in civil society organizations and media awareness programs on food security issues in the various communities, in coordination with international institutions and local government and the private sector.
- 4- Attention to some other hubs in addition to the main axes of food security, such as :

A. Coordination and integration with the institutions dealing with food security policies, whether domestic or international, and the involvement of civil society organizations.

**B. Emphasized that there should be an infrastructure in order to maintain a sustainable food security.**

**C. Emphasis on tightening the control and inspection of markets by all means possible.**

**D. The involvement of community members in the development of alternatives to the goods of food security in line with the changing desires of individuals.**

**E. Controls critical to the operations of the various monopolies, and the reduction of high food prices, both in the case of goods imported or locally produced food.**

**F. Giving civil society organizations and a strong role in the control of certain markets food security.**

**G. Seize opportunities to achieve sustainable food security.**

**H. Emphasize transparency in the implementation of various food securities.**

**I. The fight against corruption in all images in the application of food security policies, in order to reduce the effects of poverty, hunger and disease.**

**5-Critical review of what is known from existing literature and other resources in order to facilitate better targeted research and analysis of developments in trade and food security at the national level.**

**6-To provide a conceptual framework for understanding how trade liberalization and economic reforms relevant could affect the national food security at household level.**

**7- Provide a practical framework for evaluating the results of previous policies, and to predict the outcome of future initiatives, at both the national and the food security of households.**

**8-Prevent unhealthy foods , or rationalization of consumption , or imposition tax them , or provide cash support for more nutritious foods , put laws regulating the work of the manufacturers, awareness to individuals about these foods .**

- 9- Address the problem of food waste , which is now one of the problems most prevalent in the community , the depletion of natural resources scarce , and environmental costs and the serious economic and social , and there are many effective ways to reduce food waste , which can result in cost savings and environmental benefits in order to create sustainable food system .**

**HLPE Inquiry****Critical and Emerging Issues for Food Security and Nutrition**

**Prof. ALI ABDALRAHMAN**  
**Ali Aly** [ali\\_aa22\[at\]ymail.com](mailto:ali_aa22[at]ymail.com)

***O5C Production systems, green and sustainable***

Still a lot of community organizations, they do not have a strong knowledge of sustainability.

In simpler terms, is the production of food and fiber , or other plant products using farming techniques that protect the environment , public health and human societies , and animal welfare . This type of agriculture enables us to produce food healthy without compromising the ability of future generations " to follow suit . , And the major benefits of sustainable agriculture : the preservation of the environment , the protection of public health , support communities vibrant , sustainable food in the future , the possibility of agricultural and animal production industry.

In spite of the growing international interest in the green economy , and negotiations between the Member States on this concept in the period leading up to Rio +20 and challenge. This is partly due to the lack of an internationally agreed definition global green economy , and the emergence of terms and concepts are interrelated but different in recent years ( such as green growth and development of low-carbon , sustainable economy , and the economy steady-state , etc.) , the lack of clarity about what measures include policy green economy , and how they integrate with the priorities and objectives related to economic growth and poverty eradication , as well as a lack of experience in the design and implementation of national and review of the costs and benefits of green economy policies .

The philosophy of organic food production keeps on certain principles: biodiversity, ecological balance, sustainability and natural fertilization of plants, and natural pest management, and soil health. Since the farms vary in product and practice, and there is also a wide variety in how these principles can be applied. However, the production of organic food must meet certain characteristics:

- Do grown product which is used in the practice of balance with the

natural environment, using methods and materials that reduce the negative impact on the environment. Committed to organic farms to replicate the ecology of the natural environment through the preservation of biodiversity and promote healthy soil and growing conditions.

- Are produced on land which had been free of chemical pesticides and toxic pollutants known and projected , and fertilizers for at least three years prior to certification , and synthetic fertilizers and pesticides are not used in production .
- Are planted on a rotational basis within the farm system. Crops are rotated from field to field, instead of planting the same crop in the same place year after year. Planted cover crops such as clover to add nutrients to the soil and prevent weeds.
- Organic meat, poultry and egg products come from farms that use organic feed, no hormones added management to promote growth act naturally.

### **Recommendation:**

- 1- Must emphasize the development of the concept of sustainability have civil society organizations, through training and various seminars.
- 2- Merging practice in the design and implementation of national strategies for the green economy by both developed and developing countries in most regions , including Africa, Latin America , Asia Pacific and Europe countries. This emerging practice can help to provide some important ideas and clarity much needed on the types of policy measures the green economy, its scope with regard to the various sectors and national priorities, and institutional barriers, risks and costs of implementation.
- 3- Farms sustainable support local economies through the provision of job opportunities for members of the community and buy supplies from local businesses. Also require more workers sustainable farms and create more jobs, while you also do a better job of feeding people on smaller pieces of land from industrial plantations.
- 4- Despite the fact that agricultural subsidies defective part, but the vital system of government support for farmers present. Where agriculture is that unlike most other businesses, because it is costing the farm on an annual basis to borrow money to cover operating costs, with the hope that their crop generates profits covers

**borrowing costs high for most farmers. This is because of the weather, and the spread of pests, financial speculation, and agriculture is also highly volatile business.**

- 5- Farmers' markets and food cooperatives, and community supported agriculture programs continue to grow in popularity, making the local cuisine in a sustainable manner that produces more available. These programs offer consumers a chance to put their dollars directly into the pockets of farmers, cutting out middlemen and cooperation and strengthening regional food system.**
- 6- Increase sustainable food production from consumers concerned, to take responsible choices. By purchasing sustainable foods from local farms or groceries shops, leads to support the farmers who raise food responsibly and actively encourage the growth of a more sustainable diet. Instead of giving money to the industrial sector, agriculture, and give it to sustainable farms. And buy food directly in farmers' markets.**

**HLPE Inquiry****Critical and Emerging Issues for Food Security and Nutrition**

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***O5D Rural women***

Through many different studies and research shows that rural women are less likely than urban women, due to lack of education and lack of potential for them to opportunities such as urban women. Although rural women have an active role prominent and active in rural areas, making it more active than urban women, especially in developing and poor countries.

**Recommendation:**

- 1- To emphasize the growing rural women, through glances role, and it is not less effective for urban women.**
- 2- Attention and focus on the key issues faced by the rural women, such as women -headed households, and women's health, education, and activate the role of development in rural areas, and the emphasis on the role of positive and effective in the development of society, and it is a tool of local food security and self.**
- 3- Emphasis on further studies which aim to detect the activity of women in the organizations of civil society rural private, and in the civil society organizations in general, is part of the struggle and the struggle of women to participate in the development of their communities, and for the defense of the rights of the other side.**
- 4- Role in the formulation of the social movements of women in many countries, where it was parallel channels to influence the policy-making process and decision-making.**