

# Nutrition and food systems

A report by

The High Level Panel of Experts

on Food Security and Nutrition

September 2017

EXECUTIVE SUMMARY

This document contains the Summary and Recommendations of the ***Nutrition and food systems*** report by the High Level Panel of Experts on Food Security and Nutrition (HLPE).

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## Foreword

The High Level Panel of Experts for Food Security and Nutrition (HLPE) is the science-policy interface of the Committee on World Food Security (CFS), which is, at the global level, the foremost inclusive and evidence-based international and intergovernmental platform for food security and nutrition (FSN).

The HLPE reports serve as a common, comprehensive, evidence-based starting point for intergovernmental and international multi-stakeholder policy convergence in CFS. The HLPE draws its studies based on existing research and knowledge. The HLPE strives to clarify contradictory information and knowledge, elicit the backgrounds and rationales of controversies and identify emerging issues. To do so, it organizes a scientific dialogue, among Steering Committee and Project Teams members, and with the experts and knowledge communities involved in the open electronic consultations and in the external peer-reviews of the reports. This dialogue builds upon a wide diversity of disciplines, backgrounds and knowledge systems.

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Globally, one person in three is malnourished today and one in two could be malnourished by 2030 if nothing is done. Building on the international political momentum created around nutrition by the 2030 Agenda, the 2014 Rome Declaration on Nutrition and the subsequent United Nations (UN) Decade of Action on Nutrition (2016–2025), the CFS, at its 42nd Plenary session in October 2015, requested the HLPE to prepare a report on nutrition and food systems, to be presented at CFS 44 in October 2017.

While hunger remains a critical concern, overweight and obesity are rapidly increasing all over the world, including in low- and middle-income countries. Therefore, malnutrition in all its forms (undernutrition, micronutrient deficiencies and overweight and obesity) now affects all countries, whether low-, middle- or high-income. Those different forms of malnutrition can co-exist within the same country or community, and sometimes within the same household or individual, and can even paradoxically be linked: they thus must be fought altogether.

As a consequence, hunger and malnutrition will not be “self-corrected” only by economic growth, as many people thought in the past: nor will these concerns be spontaneously addressed. On the contrary,

nutrition must be integrated as an explicit objective in national policies, programmes and budgets, not only in low-income but also in high-income countries. Cross-sectoral nutrition strategies should be designed and implemented at different levels, from global to local.

Every human being has the right to adequate food. However, the progressive realization of this right will not be achieved without more sustainable food systems that facilitate healthy and sustainable food choices and ensure FSN for all, including vulnerable people with specific nutrient requirements (such as young children, adolescent girls, pregnant and lactating women, the elderly and ill people), or marginalized people with less control over their diets (such as the poor, as well as some indigenous peoples).

Current food systems have dramatic effects on human and planetary health. They shape producers' decisions and consumers' food choices. Nevertheless, this report demonstrates that human decisions and choices (whether individual or collective) regarding production and consumption can also influence food systems and improve their ability to deliver healthy and sustainable diets. In this context, the purpose of this report is two-fold.

First, the report analyses how food systems influence people's dietary patterns and nutritional status. The conceptual framework proposed by the HLPE identifies three interacting elements of food systems, i.e. food supply chains, food environments and consumer behaviour. It highlights the central role of the food environment (i.e. the physical, economic, political and socio-cultural context in which each consumer engages with the food system) in facilitating healthy and sustainable consumer food choices.

Second, the report calls for radical transformations. Within such a perspective, it presents effective policies and programmes that have the potential to shape food systems, contributing to improved FSN. Improved food environments are absolutely needed for the effective realization of the right to adequate food. I would like to highlight here two concrete priorities for action: (i) improve the physical and economic access to healthy and sustainable diets; and (ii) strengthen consumers' information and education to enable healthier food choices.

This report draws on the previous HLPE reports, many of which are highly relevant to various aspects of food systems, including the reports on sustainable agriculture and livestock, fisheries and aquaculture, and food losses and waste. As diversity is of paramount importance, short case studies illustrate a wide variety of practical experiences in different food systems and contexts.

The report provides a set of action-oriented recommendations addressed to states and other stakeholders in order to inform CFS engagement in advancing nutrition and the CFS contribution to the UN Decade of Action. While emphasizing the need for solutions that are context-specific, the report also highlights the need for consistent action at all levels. I hope that the findings and recommendations of this report will not only facilitate the policy convergence work in CFS but also inspire many stakeholders in contributing to progress towards more sustainable food systems and enhanced FSN.

The multiple burdens of malnutrition are enormous and raise ethical, political and economic concerns. In front of this challenge, action cannot wait and all stakeholders together will have to make adapted and feasible but bold decisions. The short-term costs of the actions outlined in this report may seem high, but the cost of inaction is likely to be much higher, carrying with it a terrible legacy affecting future generations.

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On behalf of the HLPE Steering Committee, I would like to acknowledge the engagement and commitment of all the experts who worked for the elaboration of this report, and especially the HLPE Project Team Leader, Jessica Fanzo (United States of America) and Project Team Members: Mandana Arabi (Iran), Barbara Burlingame (New Zealand), Lawrence Haddad (United Kingdom), Simon Kimenju (Kenya), Gregory Miller (United States of America), Fengying Nie (China), Elisabetta Recine (Brazil), Lluís Serra-Majem (Spain) and Dipa Sinha (India).

I would like to commend and thank the HLPE Secretariat for its precious support to the HLPE work.

This report also benefited greatly from the suggestions of the external peer reviewers and from the comments provided by a large number of experts and institutions, both on the scope and on the first draft of the report.

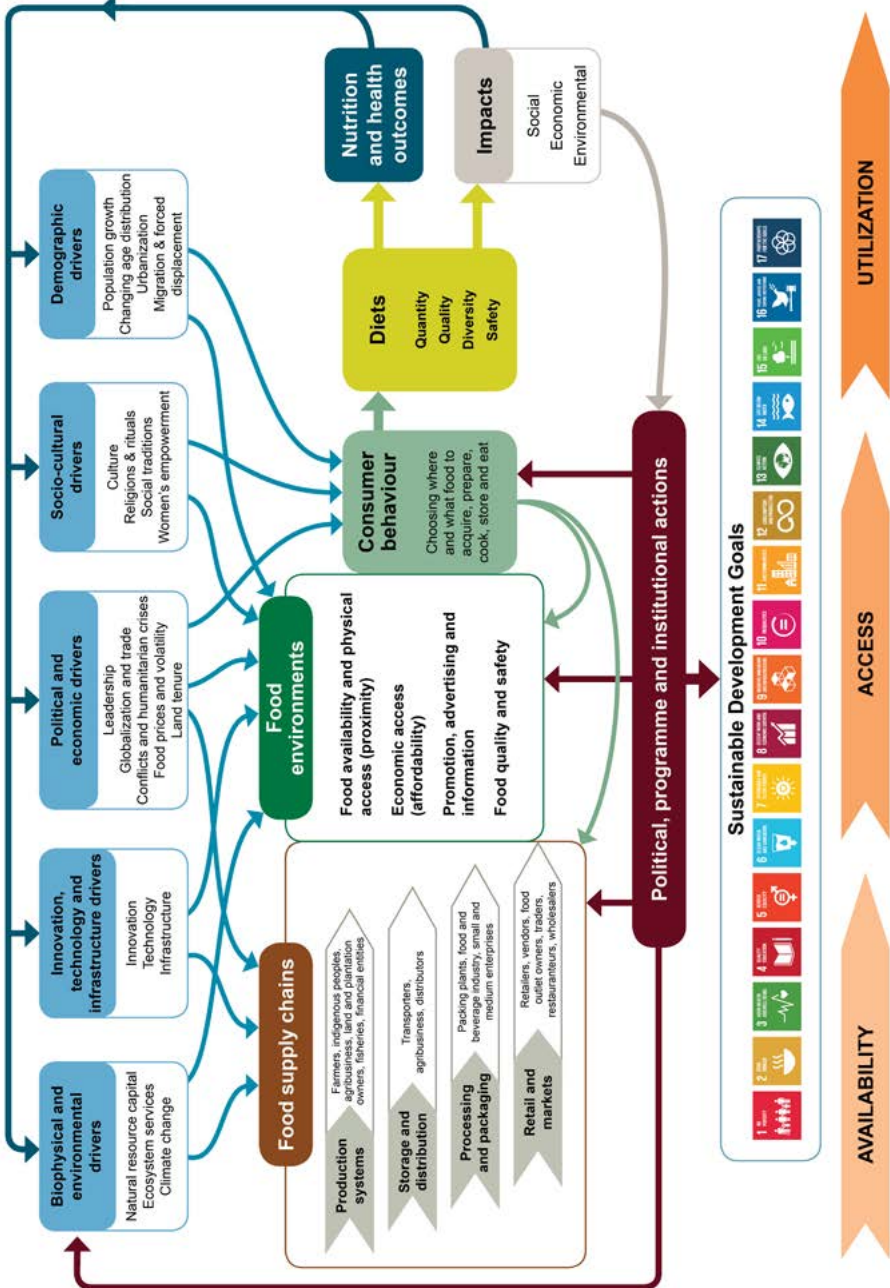
Last but not least, I would like to thank the resource partners who support the work of the HLPE in a totally independent way.

Patrick Caron



HLPE Steering Committee Chairperson, 25 September 2017

Figure 1 Conceptual framework of food systems for diets and nutrition



# Summary and recommendations

At its 42<sup>nd</sup> session in October 2015, the Committee on World Food Security (CFS) requested the High Level Panel of Experts on Food Security and Nutrition (HLPE) to prepare a report on Nutrition and Food Systems, to be presented at CFS 44 in October 2017. This topic is highly relevant to the Sustainable Development Goals (SDGs), the implementation of the 2014 Rome Declaration on Nutrition, the subsequent Decade of Action for Nutrition, and the fulfilment of the right to adequate food.

The purpose of this report is two-fold: (i) to analyse how food systems influence people's dietary patterns and nutritional outcomes; and (ii) to highlight effective policies and programmes that have the potential to shape food systems, contribute to improved nutrition and ensure that food is produced, distributed and consumed in a sustainable manner that protects the right to adequate food for all. This report is illustrated by short case studies reflecting the wide variety of practical experiences in different contexts. It also provides a set of action-oriented recommendations addressed to states and other stakeholders in order to inform CFS engagement in advancing nutrition and CFS contribution to the UN Decade of Action on Nutrition (2016–2025).

## **SETTING THE STAGE: APPROACH AND CONCEPTUAL FRAMEWORK**

1. This report aims to analyse how food systems influence diets and nutrition. It offers three significant additions to previous frameworks. First, it emphasizes the role of diets as a core link between food systems and their health and nutrition outcomes. Second, it highlights the central role of the food environment in facilitating healthy and sustainable consumer food choices. Third, it takes into account the impacts of agriculture and food systems on sustainability in its three dimensions (economic, social and environmental).

2. A food system gathers all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socio-economic and environmental outcomes. This report pays specific attention to nutrition and health outcomes of food systems. It identifies three constituent elements of food systems, as entry and exit points for nutrition: food supply chains; food environments; and consumer behaviour.
3. The food supply chain encompasses all activities that move food from production to consumption, including production, storage, distribution, processing, packaging, retailing and marketing. The decisions made by the many actors at any stage of this chain have implications for other stages. They influence the types of food available and accessible, as well as the way they are produced and consumed.
4. The food environment refers to the physical, economic, political and socio-cultural context in which consumers engage with the food system to acquire, prepare and consume food. The food environment consists of: “food entry points”, i.e. the physical spaces where food is obtained; the built environment that allows consumers to access these spaces; personal determinants of food choices (including income, education, values, skills, etc.); and the political, social and cultural norms that underlie these interactions. The key elements of the food environment that influence food choices, food acceptability and diets are: physical and economic access to food (proximity and affordability); food promotion, advertising and information; and food quality and safety.
5. Consumer behaviour reflects the choices made by consumers, at household or individual levels, on what food to acquire, store, prepare and eat, and on the allocation of food within the household (including gender repartition, feeding of children). Consumer behaviour is influenced by personal preferences determined by taste, convenience, culture and other factors. However, consumer behaviour is also shaped by the existing food environment. Collective changes in consumer behaviour can open pathways to more sustainable food systems that enhance food security and nutrition (FSN) and health.

6. These three components of food systems impact consumers' capacity to adopt sustainable diets that are: protective and respectful of biodiversity and ecosystems; culturally acceptable; accessible; economically fair and affordable; and nutritionally adequate, safe and healthy, while optimizing natural and human resources
7. A wide variety of food systems and food environments can exist or co-exist at local, national, regional and global levels. The typology suggested in this report evaluates food systems along both food supply chains and the food environment. It identifies three broad types of food systems: (1) traditional food systems; (2) mixed food systems; and (3) modern food systems.
8. In *traditional food systems*, consumers rely on minimally processed seasonal foods, collected or produced for self-consumption or sold mainly through informal markets. Food supply chains are often short and local, thus access to perishable foods such as animal source foods (ASF) or certain fruits and vegetables can be limited or seasonal. Food environments are usually limited to one's own production and informal markets that are daily or weekly and may be far from communities.
9. In *mixed food systems*, food producers rely on both formal and informal markets to sell their crops. Highly-processed and packaged foods are more accessible, physically and economically, while nutrient-rich foods are more expensive. Frequent branding and advertising accompany everyday activities, seen on billboards and in print publications, while food labelling is sometimes provided in markets. Even when food-based dietary guidelines are available, most consumers have little or no access to this information. Food safety and quality standards exist, but may not always be followed by producers.
10. *Modern food systems* are characterized by more diverse food options all year long, and by processing and packaging to extend food's shelf life. These systems include both formal and easily accessible markets in high-income areas and food deserts<sup>1</sup> and food swamps<sup>2</sup> in low-income areas. While the cost of staples is lower relative to ASF

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1 i.e. geographic areas where residents' access to food is restricted or non-existent due to the absence or low density of "food entry points" within a practical travelling distance.

2 i.e. areas where there is an overabundance of "unhealthy" foods but little access to "healthy" foods.

and perishable foods, specialty foods (e.g. organic, local) are more expensive. Consumers' access to detailed information on food labels, store shelves, and menus and food is highly promoted. Food safety

## THE MULTIPLE BURDENS OF MALNUTRITION

11. Globally, one person in three is malnourished. If current trends continue, one in two could be by 2030, in stark contrast with the objective to end all forms of malnutrition by 2030. Malnutrition takes different forms: undernutrition (underweight, stunting and wasting); micronutrient deficiencies; and overweight and obesity. These forms of malnutrition affect all countries, whether developed or developing and can also co-exist within countries, communities, households and individuals.
12. *Undernutrition*: globally, despite the progress made over the last decades, almost 800 million people are still undernourished, 155 million children under five years of age remain stunted;<sup>3</sup> and 52 million are wasted.<sup>4</sup> Undernutrition explains around 45 percent of deaths among children under five, mostly in low- and middle-income countries (LMICs). The current crisis, with four countries (Nigeria, Somalia, South Sudan, Yemen) facing famines, is also likely to derail some of this progress.
13. *Micronutrient deficiencies* refer to inadequate intake of vitamins and minerals. Those of greatest public health concerns are Vitamin A, iron and iodine. Vitamin A deficiency is the leading cause of preventable blindness in children and increases the risk of disease and death from infections. Iron-deficient anaemia is of significant concern for many women around the world leading to low cognition and work productivity. Iodine deficiency during pregnancy can compromise children's mental health and even survival. Other important deficiencies are Vitamin D, B12, folate, calcium and zinc.
14. *Overweight and obesity* are rising quickly and affect all countries. Worldwide obesity has more than doubled since 1980. In 2014, a staggering 1.9 billion adults were overweight, of which 600 million were obese. In 2014, an estimated 41 million children under five were

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3 Meaning that they have a low height-for-age, which is an indicator of chronic undernutrition.

4 Meaning that they have a low weight-for-age, which is an indicator of acute undernutrition.

overweight, a quarter living in Africa and almost half in Asia. These rising rates are linked to increases in diet-related non-communicable diseases (NCDs) such as cancer, cardiovascular disease and diabetes. Overweight and obesity are now associated with more deaths worldwide than underweight.

15. Malnutrition affects the entire life cycle and its effects can extend across generations. Some groups are particularly vulnerable to malnutrition, including those with specific nutrient requirements at critical stages of their life cycle (such as young children, adolescent girls, pregnant and lactating women, the elderly and people who are ill or immuno-compromised) or marginalized groups that have less control over their diets (such as the urban and rural poor, as well as some indigenous peoples). Malnutrition during the first 1 000 days of life increases the risk of morbidity and mortality and limits children's mental and physical growth to levels far below their full genetic potential, having important consequences for their whole life.
16. Traditional food systems currently are associated with the highest prevalence of undernutrition, including stunting, wasting and under-five mortality, as well as the highest prevalence of micronutrient deficiencies but with lower levels of overweight and obesity in adults. All burdens of malnutrition co-exist in mixed food systems: this is a challenge in terms of prioritizing policies and programmes to tackle these multiple burdens. Finally, modern food systems are associated with lower levels of undernutrition and micronutrient deficiencies but higher levels of overweight and obesity.

## **DIETS IN TRANSITION**

17. Global dietary patterns have been changing rapidly in recent decades. With globalization, urbanization and income growth, people are experiencing new food environments, expanding their food choices and diversifying their dietary patterns in both positive and negative directions.
18. In some low-income countries (LICs), many of the poor eat grain- or tuber-dominated diets low in micronutrients, as this is what is accessible and affordable. While traditional foods such as legumes, seasonal fruits, leafy vegetables and forest foods fill

some nutrient gaps, other fresh fruits and vegetables as well as ASF often remain costly and inaccessible. As households' incomes rise, the consumption of foods associated with both healthy and unhealthy diets generally increases. High-income households tend to rely less on staple grains and more on ASF, fruits and vegetables. However, they also tend to consume more foods high in sugar, salt and saturated and trans fats such as highly-processed and packaged foods, sugar-sweetened beverages, red and processed meats. Snacking and eating away from home also tend to increase, with less cooking taking place at home.

19. The nutrition transition refers to changes in lifestyle and dietary patterns driven by urbanization, globalization and economic growth, and their resulting impacts on nutrition and health outcomes. As countries urbanize and become wealthier, in general, obesity rises. However, these global trends should not hide the significant diversity of diets around the world, reflecting the diversity of food production landscapes and ecosystems, socio-economic conditions, cultures and beliefs. Studies of food systems adapted to their local context and of the associated traditional knowledge built up over millennia can provide new insights and pathways towards more sustainable food systems.
20. Significant increases in ASF consumption are projected in developing countries, with mixed results on nutrition: while LICs may struggle to increase ASF consumption to the levels necessary to reverse micronutrient deficiencies, middle-income countries (MICs) and high-income countries (HICs) risk overconsuming ASF with negative impacts on health. Reversing such trends remains a significant concern, including for the sustainability implications of ASF supply, considering the complex impacts of ASF on health, nutrition status and the environment. In an interconnected, globalized food system, balancing human and planet health also presents significant policy challenges: some diets, such as the Mediterranean diet, provide useful insights to tackle this issue.
21. Food safety remains an important issue. Low safety levels in the food supply and poor water quality contribute to diarrhoea and other communicable diseases in both urban slums and rural areas. Children under five are most at risk, bearing 40 percent of the food-borne disease burden. Lack of infrastructure, including a cold chain, in many LICs can render perishable foods unsafe and increase the

risk of pathogen transmission along the food supply chain. Strong institutions are crucial to foster the needed investments and to design and enforce food regulations and standards.

## DRIVERS OF FOOD SYSTEM CHANGES

22. The report identifies five main categories of drivers of food system changes that influence nutrition and diets: biophysical and environmental; innovation, technology and infrastructure; political and economic; socio-cultural; and demographic drivers.
23. *Biophysical and environmental drivers.* Food production is heavily dependent on biodiversity and ecosystems, including not only agriculture but also forests, aquatic ecosystems and mosaic landscapes. Agricultural systems and food supplies are becoming increasingly homogeneous and dependent on a small number of 'global' crops, including major cereal and oil crops. At the same time, agricultural practices are increasingly moving towards intensified monoculture, which may improve grain yields in the short term but limits the biological diversity necessary for high-quality diets. Climate change and variability, as well as more severe and frequent floods and droughts, will impact health, productivity, and resilience of ecosystems, communities and households, particularly for the most vulnerable. Food systems need to adapt to climate change and can also significantly contribute to its mitigation.
24. *Innovation, technology and infrastructure drivers.* Innovation has been a major engine for food system transformation in the past decades and will be critical to address the needs of a rapidly growing population in a context of climate change and natural resource scarcity. Building more sustainable food systems to enhance FSN will require not only new research and new technologies, but also better access to and use of existing technologies, developing context-specific solutions for local ecosystems, adapted to local socio-economic and socio-cultural conditions. More investment is needed in research and development of nutritious food crops (such as fruits, vegetables and pulses, as well as neglected and orphan crops) as opposed to major staple commodities. The limitations and potential risks of technologies for FSN, health, livelihoods and the environment must also be considered. Infrastructure, especially for food transportation, needs to be improved and equitably accessible.

25. *Political and economic drivers.* Leadership, as well as inclusive governance mechanisms, from global to local levels, is crucial: to invest in sustainable food systems; to design and implement policies and programmes to strengthen food systems, improve diets and enhance FSN; and to overcome power imbalances. Accountability and sustained commitment require significant political will. Political and economic drivers also include: globalization, foreign investment and trade; food policies, including food-based dietary guidelines and taxes and subsidies; food prices and price volatility; land tenure; conflicts and humanitarian crises. In situations of conflicts and protracted crises, there is a critical need for nutrition-sensitive interventions that link humanitarian response with longer-term strategies to strengthen the resilience of food systems and improve FSN.
26. *Socio-cultural drivers.* Individual food choices, although deeply personal, also reflect cultures, rituals and social traditions. Food is an important part of culture, particularly for indigenous peoples: the types of foods we consume and the way we prepare and eat those foods, with whom and where, are repositories of traditions and shape cultural identity. Food systems and food environments are consistently shaping cultures and traditions and vice versa. Gender relationships and norms are among the most significant drivers of food environments and diets. Women can influence the household diet and, as primary caregivers, have an influence on children's nutritional status. Therefore, women and girl's empowerment, through education, information and access to resources and services, is key for FSN.
27. *Demographic drivers.* Population growth and changing age distribution, urbanization, migration and forced displacement have driven radical changes in food systems and diets in the past decades and will remain major drivers in the future. The concentration of population growth in the poorest countries will make it harder for these governments to combat hunger and malnutrition. Urbanization is expected to put additional stress on food systems through increased demand for a greater diversity of foods. Urban demand will increasingly dictate what foods are grown by rural producers and how these foods are processed, distributed and marketed. Food insecurity can be both a cause and consequence of migration

and forced displacement. There is growing concern regarding the number of children who are migrating due to conflicts, and facing an increased risk of malnutrition due to lack of access to healthy diets as well as social services.

## **POSITIVE DIRECTIONS FOR FOOD SYSTEMS, DIETS AND NUTRITION**

28. Many promising programmes and policies to reduce the multiple burdens of malnutrition are currently being piloted, tested and scaled. Food systems allow many points for intervention – across the supply chain, within food environments and related to consumer behaviour. Intervention is also possible throughout the various drivers that affect food systems, directly or indirectly.
29. The *food supply chain* impacts diets and nutrition positively and negatively by creating entry and exit points for nutrition, affecting the nutritional value of the food produced. Supply chains are a point of leverage for agriculture to improve nutrition, particularly through traditional production systems focused on micronutrient-rich foods. Supply chains impact how foods are processed, distributed and marketed – activities that can all affect the nutritional quality of foods accessible in a given food environment. Nutrition awareness among actors along the supply chain can also motivate them to maximize nutrition entering the chain.
30. Improved *food environments* allow consumers to purchase and consume more nutritious and healthy foods. Although a substantial body of research describes food environments in HICs – particularly in urban settings – less is available on LMICs. Factors that limit access to nutritious and healthy foods include economic constraints, lack of knowledge and resulting low demand. Nevertheless, policies and programmes focused on the food environment have been implemented worldwide, including approaches aimed to: improve access to nutritious and healthy foods in food deserts; provide healthy options in public establishments; and promote healthier diets through regulations and standards, taxes, subsidies, trade policies, labelling and advertising.

31. Regulation, information and education can *orient consumers* towards healthier and more sustainable food choices. Mass media campaigns, social and behaviour change communication, social protection programmes and food-based dietary guidelines all serve to increase awareness and influence consumer behaviour. Evidence suggests that information and education alone may not trigger significant changes and that communication programmes must incorporate insight on actionable steps to change habits to be more effective. Promoting traditional foods, cooking and empowering consumers, especially women, to be nutrition champions of healthy diets all serve to shape diet choices.
32. Each food system, whether traditional, mixed or modern, faces its own challenges, but all of them have the potential to open specific pathways towards sustainability and healthier diets that enhance FSN now and in the future. “Modern” food systems should not be seen as the end goal. Traditional food systems, and their associated knowledge systems, have inherent value and can be a source of inspiration for policy-makers. These three types of food systems all need adapted improvements to deliver healthier diets and enhance FSN for all people.
33. In *traditional food systems*, policies and programmes should focus on availability and accessibility of healthy diets. These might involve strategies to protect farmers, especially smallholders, often net buyers of food, who are particularly vulnerable to external shocks. Investments in infrastructure and storage facilities that allow for safer storage and easier transport of food, and integration of technologies such as food fortification and processing, could also help people meet their dietary needs. Interventions should also support the affordability of a healthy diet, including protein- and micronutrient-rich foods.
34. In *mixed food systems*, policies and programmes aimed at strengthening food safety and improving infrastructure are important, particularly in the informal sector. Moreover, these food systems could also be improved by the introduction of price incentives (for instance through taxes and subsidies), marketing restrictions, improved labelling, promotions and incentives for nutritious foods and zoning incentives to increase access to retailers selling nutritious foods in low-income areas.

35. In *modern food systems*, policy-makers should focus on encouraging the availability and accessibility of diverse and healthy diets, particularly for the marginalized and the most vulnerable. They should aim to limit the consumption of highly-processed and nutrient-poor foods by targeting the industries that produce them (e.g. through marketing restrictions, content restrictions and labelling requirements for trans fats and added sugars) as well as consumers (e.g. through subsidies and taxes; nutrition education). Such policies could mitigate some of the negative health consequences generally associated with modern food systems.

## TRANSLATING EVIDENCE INTO ACTION

36. The motivation to act is strong but there are many barriers to developing and implementing effective policies and programmes. Action requires recognizing the right to food and prioritizing this rights-based perspective for the most vulnerable. Although recent pledges by governments, and the SDGs themselves, emphasize rights-based approaches, many countries still fail to recognize this right. Power struggles present challenges as transnational food corporations use their economic power to hinder political action to improve food systems and diets. Conflicts of interest also disrupt goals, occurring when the policies or practices of an individual or institution differ from health and nutrition goals. Salient examples include food and beverage marketing in unhealthy food environments and advertising foods high in fat, sugar and salt to children as well as biased industry funding for research.
37. Enabling environments are those in which governments have the political will as well as the coordination, accountability and effective responses necessary to improve nutrition and meet the needs of the marginalized and the most vulnerable. The multi-sectoral nature of malnutrition requires individual, institutional and system-level collaborative engagement and coordination. Coordination is necessary both vertically (among different ministries and from the national to the local level) and horizontally (across sectors and multiple stakeholders). Effective implementation further requires clear definitions of the roles and responsibilities of all stakeholders and accountability based on trust, inclusiveness, transparency and

verification. Effective responses also depend on surveillance and monitoring.

38. Success will require more investment in nutrition, financially and in human capacity and social movements, coalitions and networks. Improving FSN requires large investments but could provide significant long-term benefits in reducing health costs and encouraging economic growth in LMICs.
39. The nutrition community must seize this moment to make the UN Decade of Action on Nutrition meaningful, action-oriented and impactful. To do so, the global community should embrace the SDGs as interlinked and address simultaneously all forms of malnutrition. This will require everyone who interacts with food systems and the food security mandate to act. Food supply chain and food environment actors, whether small or large, need to be valued and supported to shift towards nutrition-sensitive agriculture and food systems. Solutions need to be adapted to fit changing consumer demands, preferences and tastes.

# Recommendations

The following set of recommendations, building upon the main findings of this report, is a contribution to the progressive realization of the right to adequate food and nutrition. Food systems shape people's diets, their health and nutrition outcomes and their overall well-being. The way food is produced, distributed and consumed also impacts the integrity of the planet and the stability of nations.

## Overarching recommendations

### 1 STRENGTHEN THE INTEGRATION OF NUTRITION WITHIN NATIONAL POLICIES, PROGRAMMES AND BUDGETS

**States should, in collaboration with affected stakeholders:**

- a) Recognize the diversity of food systems (traditional, mixed, modern) and design context-specific policies and programmes that support the co-existence of diverse food systems and diets.
- b) Integrate a nutrition-focused food system approach into national development, health and economic plans.
- c) Facilitate an inclusive dialogue and develop nutrition strategies at national and local levels, which focus on improving food environments.
- d) Foster policy coherence in order to improve diets and nutrition, through enhanced coordination across sectors, including agriculture, environment, energy, water, sanitation and hygiene (WASH), health, education, fiscal policies, economic and social development.
- e) Increase the allocation for nutrition spending in national budgets and look for the greatest synergies for improved nutritional outcomes within existing spending on agriculture and food systems.
- f) Improve food and nutrition literacy throughout society through popular education programmes and other appropriate schemes.
- g) Improve capacity by investing in a workforce of nutrition practitioners, and by educating a new generation of food system professionals on nutrition.

## **2 STRENGTHEN GLOBAL COOPERATION TO END HUNGER AND MALNUTRITION**

### **States and inter-governmental organizations (IGOs) should:**

- a) Increase the share of official development assistance (ODA) to support more sustainable food systems, to address all forms of malnutrition, and to prevent diet-related non-communicable diseases.
- b) Avert devastating, costly famines, by strengthening local food systems and longer-term development support, and by investing in humanitarian aid that supports communities' capacities and resilience.

## **3 ADDRESS THE IMPACTS OF TRADE AND INVESTMENT AGREEMENTS ON FOOD ENVIRONMENTS AND DIETS**

### **States and IGOs should:**

- a) Through the use of ex-ante assessment, ensure that multilateral and bilateral trade and investment agreements do not have a negative impact on food environments and diets.
- b) Ensure that multilateral and bilateral trade and investment agreements are consistent with nutrition policies and favour the transition towards more sustainable food systems.

## **4 ADDRESS THE NUTRITIONAL VULNERABILITIES OF PARTICULAR GROUPS**

### **States and IGOs should:**

- a) Take specific measures to ensure that vulnerable and marginalized groups (including young children, adolescent girls, pregnant and lactating women, the elderly, people who are ill or immunocompromised, the rural poor and indigenous peoples) are able to access or achieve a sufficient, diverse, nutritious diet that is culturally appropriate.

## **5 IMPROVE NUTRITIONAL OUTCOMES BY ENHANCING WOMEN'S RIGHTS AND EMPOWERMENT**

### **States and IGOs should:**

- a) Ensure that laws and policies provide men and women equal access to resources including land, financial and technical resources, water and energy.
- b) Recognize and value the importance of unpaid care work for human health and FSN. Facilitate the preparation of nutritious food at the household level, recognizing the time this requires. Promote the redistribution of unpaid care work within the household.
- c) Strengthen rural women's participation and representation at all levels of policy-making for FSN, to ensure their perspectives are taken into account.
- d) Create an enabling environment to promote breastfeeding, ensuring that decisions to breastfeed do not result in women losing their economic security or any of their rights.

## **6 RECOGNIZE AND ADDRESS CONFLICTS OF INTEREST**

### **States, IGOs and other stakeholders should:**

- a) Identify and acknowledge conflicts of interest (COIs) as well as imbalanced power relationships between stakeholders, and establish participatory mechanisms in order to address them in policy-making and implementation.
- b) Ensure transparency and accountability mechanisms, using SMART (specific, measurable, achievable, realistic and time-bound) indicators and commitments that are captured through coordinated, open access monitoring systems to prevent and address COIs.
- c) Protect nutrition sciences against undue influence and corruption, including protecting scientists from retaliation and intimidation, through appropriate rules, effectively monitored and enforced.

## **7 IMPROVE DATA COLLECTION AND KNOWLEDGE-SHARING ON FOOD SYSTEMS AND NUTRITION**

### **States, IGOs, the private sector, academic institutions and civil society organizations (CSOs) should:**

- a) Promote nutrition-focused, policy-relevant research on food systems and food demand, using an interdisciplinary systems approach, to understand the drivers and determinants of food environments and food choices as well as the gaps in evidence on such decisions.
- b) Improve the availability (through open access where appropriate) and quality of multi-sectoral information systems that capture diet, food composition and nutrition-related data for improved policy development and accountability, including through the promotion of harmonized methods for data collection.
- c) Invest in participatory systems for the sharing of knowledge and best practices among stakeholders in the food supply chain, while respecting the intellectual and cultural property rights of indigenous peoples.
- d) Draw on the knowledge, experience and insights of individuals who are not usually regarded as members of the nutrition community – e.g. community leaders, chefs, supermarket buyers, influencers on social media, youth leaders, young entrepreneurs, mayors and local communities.

# Recommendations across food supply chains, food environments and consumer behaviour

## 8 ENHANCE OPPORTUNITIES TO IMPROVE DIET AND NUTRITION OUTCOMES ALONG FOOD SUPPLY CHAINS

### States, IGOs, the private sector and CSOs should:

- a) Support initiatives that contribute to the production of nutritious, locally-adapted foods and contribute to dietary quality and diversity, including by:
  - safeguarding and supporting Globally Important Agriculture Heritage Systems;
  - providing incentives to produce nutritious foods and protect local agrobiodiversity;
  - providing incentives for agro-ecological and other types of environmentally-friendly farming practices;
  - promoting nutritious foods and sustainable diets along food supply chains.
- b) Protect and enhance nutritional value along food supply chains, including by:
  - improving connectivity between rural, peri-urban, and urban supply and demand in order to propose to consumers a greater diversity of nutritious foods and support local economies, through appropriate infrastructure, markets and technologies, including e-commerce;
  - developing and promoting policies, practices and technologies that protect or add nutritional value;
  - promoting practices and technologies to improve food safety and reduce food quality losses and waste, paying special attention to aflatoxins.

- c) Ensure the food supply is healthy for the consumer, including by:
- providing financial and promotional incentives for retailers and food outlet owners, including street food vendors, to sell safe foods, made with less sodium and a higher proportion of healthy oils, fruits and vegetables;
  - protecting consumer health by establishing a monitoring system to reduce chemical and microbiological contamination of food and water supplies;
  - improving food safety governance and control through appropriate institutions and policies along food supply chains, as well as through innovations and technologies, labelling and standards, monitoring and surveillance.

## **9 IMPROVE THE QUALITY OF FOOD ENVIRONMENTS**

- a) CFS should consider the opportunity to elaborate voluntary guidelines on improved food environments for healthy diets.

### **States, IGOs, the private sector and CSOs should:**

- b) Make nutritious foods more accessible and convenient in public places (schools, hospitals, etc.), as well as in home and school gardens, and rural marketplaces to provide greater dietary diversity and quality.
- c) Design and implement policies and regulations that improve the built environment to promote nutritious food, including zoning regulations and tax regimes to minimize food deserts and swamps.
- d) Regulate health claims on food packaging and adopt a front labelling system that is easy to interpret.
- e) Strengthen national food safety standards and quality assurance and develop better global surveillance systems for real-time information.
- f) Phase-out advertising and promotion of unhealthy foods, especially to children and adolescents.
- g) Institute policies and practices that implement the International Code of Marketing of Breast-milk Substitutes.

## 10 CREATE CONSUMER DEMAND FOR NUTRITIOUS FOOD

### **States and IGOs, with the support of the private sector and CSOs should:**

- a) Develop global and national guidelines for healthy and sustainable diets and determine ways to make guidelines actionable and user-friendly for consumers.
- b) Implement economic and social policies that increase demand for nutritious foods and lower demand for nutrient-poor foods, such as establishing evidenced-based tax policies on foods of differing nutritional value.
- c) Ensure that social protection programmes such as school feeding and cash transfers lead to improved nutritional outcomes.
- d) Promote food cultures, including cooking skills and the importance of food in cultural heritage, as a vehicle to promote nutrition literacy.

## The CFS and the HLPE

The High Level Panel of Experts on Food Security and Nutrition (**HLPE**), science-policy interface of the **CFS**, was created in October 2009, as an essential element of the reform of the **CFS**, to contribute to its two key objectives: inclusiveness and evidence base.

**HLPE** reports serve as a common, comprehensive, evidence-based starting point for intergovernmental and international multi-stakeholder policy debates in **CFS**. The **HLPE** draws its studies based on existing research and knowledge. The **HLPE** thrives to clarify contradictory information and knowledge, elicit the backgrounds and rationales of controversies, and identify emerging issues. **HLPE** reports are the result of a continuous dialogue between **HLPE** experts and a wide range of knowledge-holders across the world, building bridges across regions and countries, across scientific disciplines and professional experiences.

*One of the key roles of the reports is to help members and participants in **CFS** to understand why they disagree.*

MS Swaminathan, 1<sup>st</sup> **HLPE** Chairperson

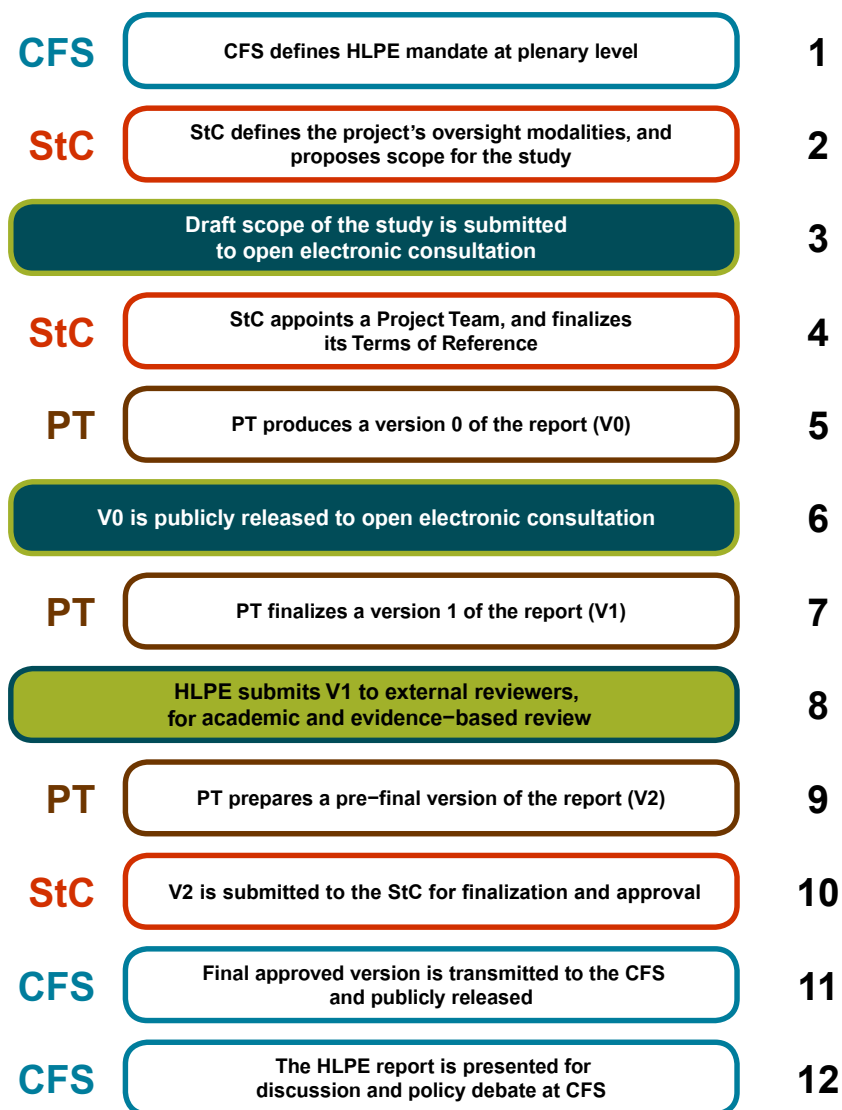
The project cycle to elaborate the reports includes clearly defined stages (Figure 4), starting from the political question and request formulated by the **CFS**. This mobilizes topic bound and time bound Project Teams working under the Steering Committee's scientific and methodological guidance and oversight. It includes also open consultations and an external scientific peer-review on a pre-final draft. The report is finalized and approved by the Steering Committee during a face-to-face meeting.

The **HLPE** runs two open consultations per report: first, on the scope of the study; second, on a VO "work-in-progress" draft. This opens the process towards to all experts interested as well as to all concerned stakeholders, which are also knowledge-holders. Consultations enable the **HLPE** to better understand the issues and concerns, and to enrich the knowledge base, including social knowledge, thriving for the integration of diverse scientific perspectives and points of view.

**HLPE** reports are widely used as reference documents within and beyond **CFS** and the UN System, by the scientific community as well as by political decision-makers and other stakeholders, at international, regional and national levels.

The **HLPE** is exclusively funded through a voluntary trust fund based in FAO (see next page for the list of its resource partners). This trust fund covers the costs of elaboration, translation and publication of the reports, as well as StC and PT meetings. As per standard practice in international expert panels, all the experts involved in the **HLPE** are working on a pro-bono basis. The annual budget for the **HLPE** is around 1 million USD, plus in-kind contributions.

Figure 2 HLPE project cycle



**CFS** Committee on World Food Security  
**HLPE** High Level Panel of Experts on Food Security and Nutrition  
**StC** HLPE Steering Committee  
**PT** HLPE Project Team

## The HLPE resource partners (2011-2017)



Australian Government  
Department of Agriculture  
and Water Resources

Australia



China



Ethiopia



European Union



Finland



*Liberté • Égalité • Fraternité*  
RÉPUBLIQUE FRANÇAISE

France



Germany



Department of  
**Agriculture,  
Food and the Marine**  
An Roinn  
**Talmhaíochta,  
Bia agus Mara**

Ireland



Monaco



New Zealand



Norway



Russian Federation



GOBIERNO  
DE ESPAÑA

MINISTERIO  
DE AGRICULTURA, ALIMENTACIÓN  
Y MEDIO AMBIENTE

Spain



The Sudan



SWEDEN



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

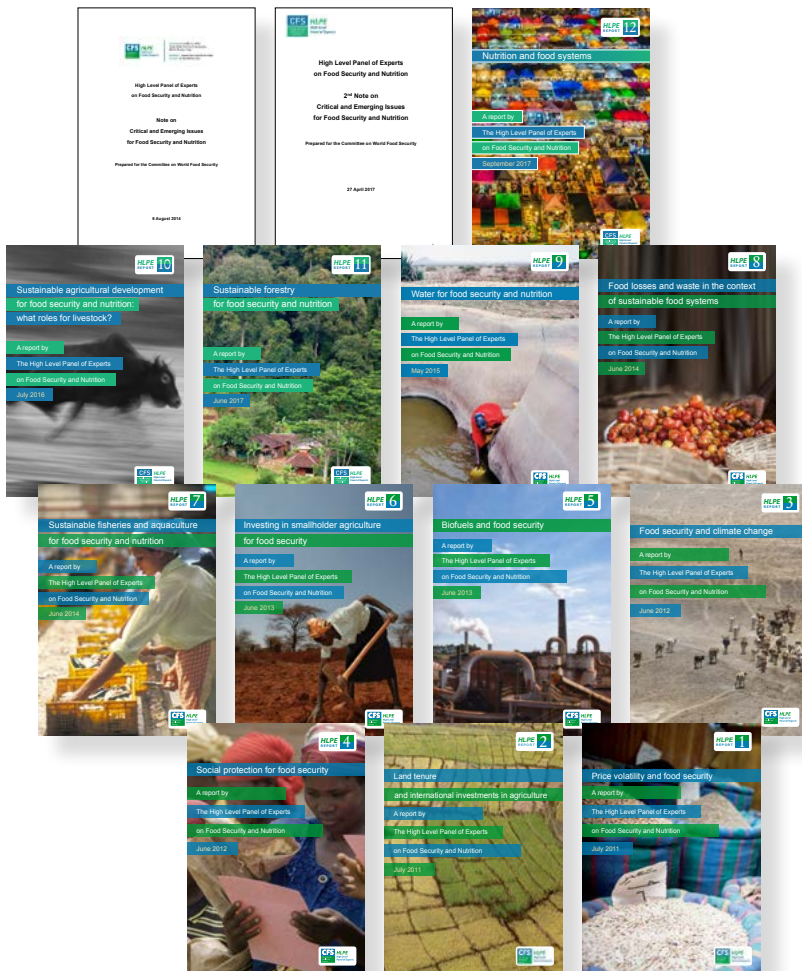
Switzerland



United Kingdom

# The HLPE publications (2011-2017)

Since its establishment in 2010, the HLPE has produced 12 reports, all used as starting points for policy debates in CFS. The HLPE has also produced two notes on Critical and emerging issues for food security and nutrition. HLPE reports are widely used as reference documents within and beyond CFS and the UN System, by the scientific community as well as by political decision-makers and different stakeholders at international, regional and national levels.



**HLPE Steering Committee members (September 2017)**

Patrick Caron (Chair)  
Carol Kalafatic (Vice-Chair)  
Amadou Allahoury  
Louise Fresco  
Eileen Kennedy  
Muhammad Azeem Khan  
Bernardo Kliksberg  
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**Referencing the report**

HLPE. 2017. Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.  
<http://www.fao.org/3/a-i7846e.pdf>

## **HLPE Reports series**

- #1 Price volatility and food security (2011)
- #2 Land tenure and international investments in agriculture (2011)
- #3 Food security and climate change (2012)
- #4 Social protection for food security (2012)
- #5 Biofuels and food security (2013)
- #6 Investing in smallholder agriculture for food security (2013)
- #7 Sustainable fisheries and aquaculture for food security and nutrition (2014)
- #8 Food losses and waste in the context of sustainable food systems (2014)
- #9 Water for food security and nutrition (2015)
- #10 Sustainable agricultural development for food security and nutrition: what roles for livestock? (2016)
- #11 Sustainable forestry for food security and nutrition (2017)
- #12 Nutrition and food systems (2017)

Worldwide, one person in three is malnourished today and one in two could be malnourished by 2030 if nothing is done. While hunger remains a critical concern, overweight and obesity are rapidly increasing all over the world, including in low-income countries. Therefore, malnutrition in all its forms – undernutrition, micronutrient deficiencies, overweight and obesity – now affects all countries. Economic growth alone will not be enough to end hunger and malnutrition. Nutrition has to be set as an explicit objective in coherent and cross-sectoral strategies, policies and programmes. In this context, this report analyses how food systems influence people's food choices and nutritional status. It calls for radical transformations and presents effective policies and programmes that have the potential to shape more sustainable food systems, contributing to the progressive realization of the right to adequate food.