

# Supporting National and International Statistical Processes: Challenges and Opportunities

30 November 2015, Kigali, Rwanda

**International Workshop on**

***Statistics on nitrogen input from livestock manure:***

***Estimating availability and use***



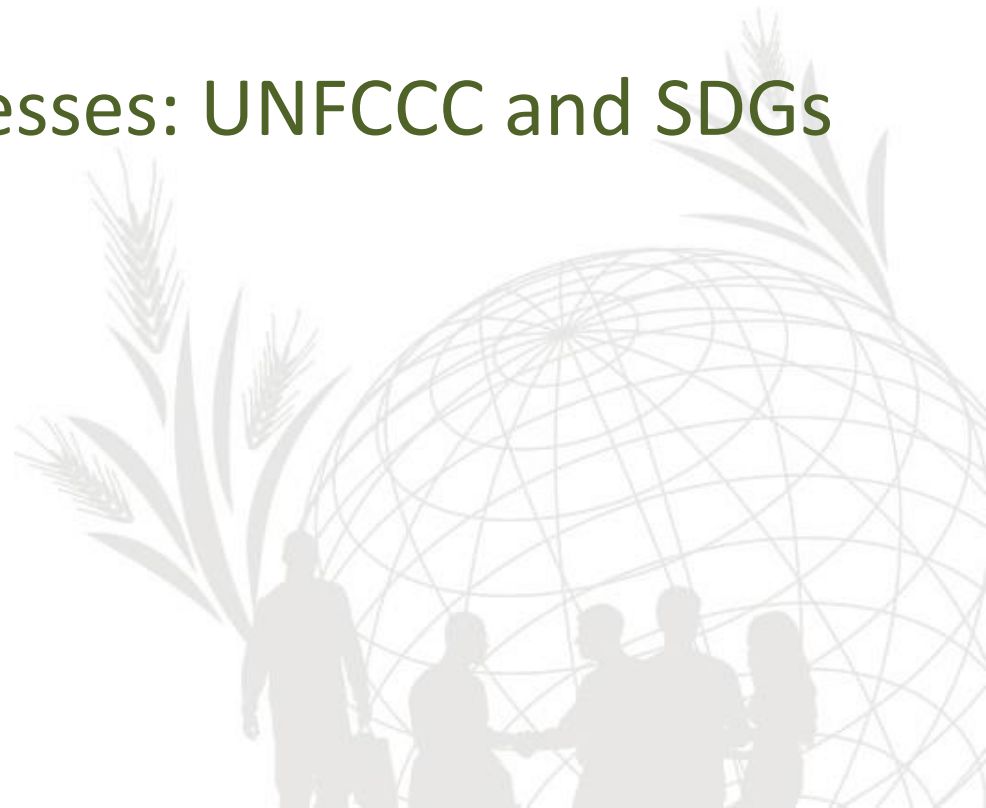
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# Summary

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- National Statistical Processes and FAO
- Technical and Institutional Challenges
- International Processes: UNFCCC and SDGs
- SEEA Agriculture
- Conclusions

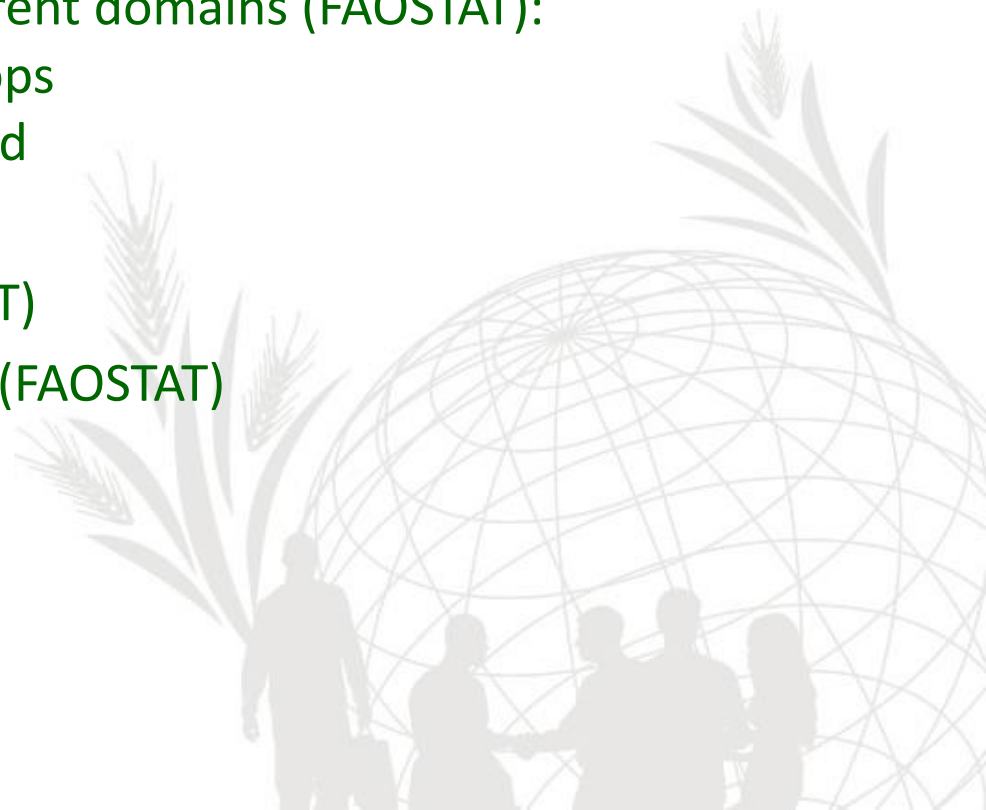


# FAOSTAT and FRA as a source of Official National Statistics

- FAO has long maintained global datasets on agricultural and forest data, useful for national analysis
  - Agricultural statistics in different domains (FAOSTAT):
    - Production: Livestock, Crops
    - Resources: Fertilizers, Land
  - Forestry statistics:
    - Resources: Land (FAOSTAT)
    - Forestry: wood products (FAOSTAT)
    - Forest biomass (FRA)



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# FAO Processes: Member Countries Data Reporting




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- Statistical Questionnaires on fertilizers (synthetic and organic) sent to member countries annually
- Data collected on nutrients (N P K) and products:
  - ✓ Production, trade and apparent consumption;
  - ✓ Application to fields (crop and pastures);
- Improved Guidelines for World Census of Agriculture  
WCA 2020 –New Annex on Manure



# The FAOSTAT questionnaire

 <b>FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS</b> <b>STATISTICS DIVISION</b>	
<b>Questionnaire on Crop and Livestock Production and Utilization</b> <b>Excel Version</b>	
Reference Years: 2009-2011	

<b>National Reporting Office</b> Reporter name: Title: Administration and Office: Address: Web site address: Signature: Tel:                      Fax:	<table border="1"> <tr> <td rowspan="2">  <b>FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS</b>  <b>STATISTICS DIVISION</b> </td> <td></td> <td style="text-align: right;">Reference Years: 2008-2011</td> </tr> <tr> <td colspan="2" style="text-align: center;"> <b>Questionnaire on Agricultural Resources</b>  <b>Fertilizers</b> </td> </tr> <tr> <td colspan="3" style="text-align: center;"> <b>National Reporting Office and Contact name</b> </td> </tr> <tr> <td>Reporter name:</td> <td colspan="2"></td> </tr> <tr> <td>Title:</td> <td colspan="2"></td> </tr> <tr> <td>Administration and Office:</td> <td colspan="2"></td> </tr> <tr> <td>Address:</td> <td colspan="2"></td> </tr> <tr> <td>Tel:</td> <td>Email:</td> <td>http://                      Date:</td> </tr> <tr> <td colspan="3">           This questionnaire contains the following sections:  <b>Section 1: Primary Crop Production</b>  <b>Section 2: Selected Primary Crops Utilization</b>  <b>Section 3: Livestock (Animal Numbers and Livestock Production)</b>  <b>Section 4: Selected Derived Agricultural Commodities</b>  <b>Section 5: Crop and Livestock Metadata</b>    <b>N.B.:</b> - Data should refer to national and annual coverage            - Official data previously reported have been included            - Description of commodities as well as instructions            - Should you have any additional data on crop and livestock production and utilization (as an attachment to this questionnaire).    <b>We kindly ask you to provide a reply by</b> </td> </tr> <tr> <td colspan="3">           • The Questionnaire on Fertilizers has five major sections:                Production, Domestic Availability, Utilization, Organic Material and Metadata.              • Detailed explanatory notes may be found in the 'Explanatory Notes' sheet.            • Detailed instructions may be found in the 'Instructions' sheet.              • If you have any queries regarding this questionnaire please contact:                Mr. Robert Mayo                Tel: (+39) 06 5705 4105                E-mail: Robert.Mayo@fao.org                  <a href="http://faostat.fao.org/site/575/default.aspx#ancor">http://faostat.fao.org/site/575/default.aspx#ancor</a> </td> </tr> <tr> <td colspan="3">           We kindly ask you to provide a reply by <b>19/Oct/2012</b> </td> </tr> <tr> <td colspan="3">           FAO takes this opportunity to thank your Government for its assistance in completing this questionnaire and looks forward to receiving a reply.            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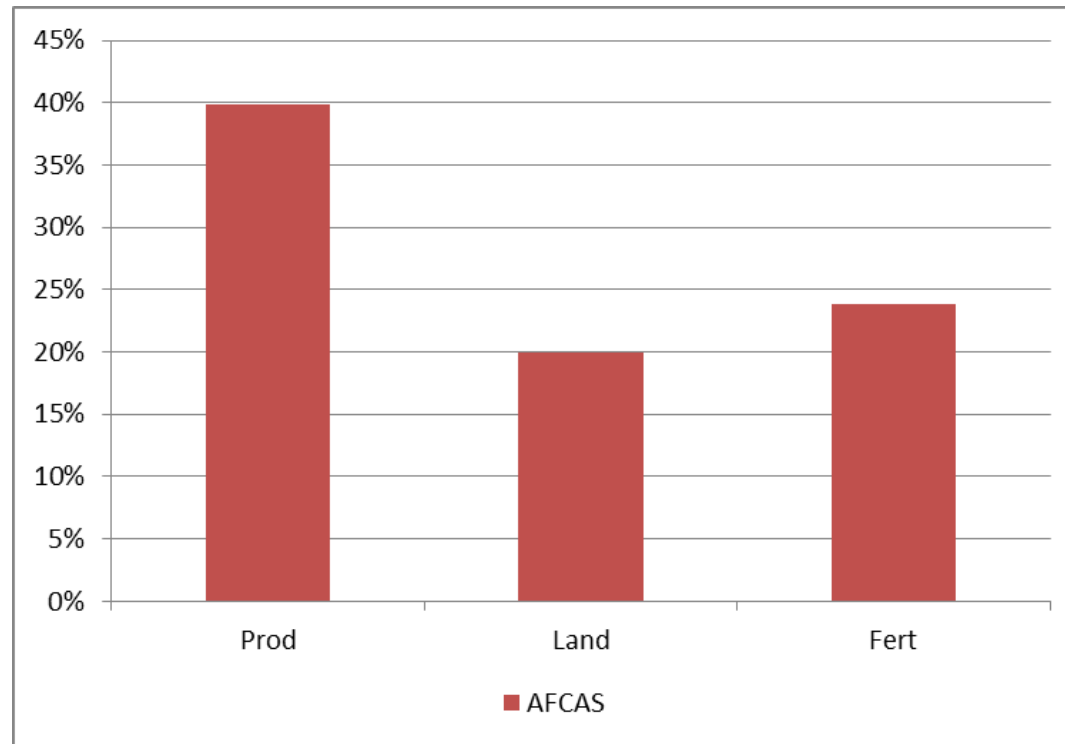
# Who receives the FAOSTAT questionnaires?

	Land			Production			Fertilizers		
	Ministry	NSO	Other	Ministry	NSO	Other	Ministry	NSO	Other
Algeria	X				X		X		
Cameroon		X			X			X	
Central African Republic	X				X		X		
Democratic Republic Congo		X			X		X		
Côte d'Ivoire	X				X		X		
Egypt		X			X		X		
Ethiopia		X			X		X		
Gabon		X			X			X	
Ghana		X			X			X	
Kenya		X			X		X		
Madagascar			X				X		
Mali	X				X				X
Mauritania		X			X			X	
Morocco			X		X		X		
Namibia	X				X			X	
Nigeria		X		X			X		
Rwanda		X			X		X		
Senegal			X		X				X
South Africa			X		X			X	
Sudan	X						X		
United Republic of Tanzania		X			X			X	
Uganda	X				X			X	
Zambia		X			X			X	



# Response rate to FAO questionnaires from Africa

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Source: FAO, 2015



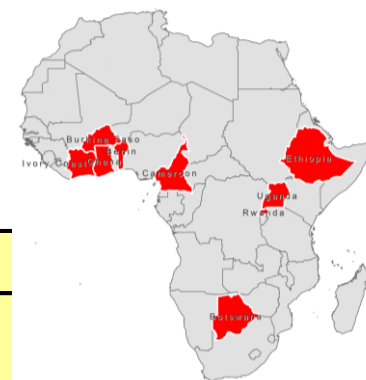
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## Information difficult to collect

## Response rates for fertilizer questionnaires

Workshop on manure statistics

Country participants



Region	Number of countries (a)	Number of questionnaires sent (a)	Response rate						
			2007	2008	2009	2010	2011	2012	2013
Eastern Africa	22	16	38%	31%	13%	31%	31%	31%	19%
Middle Africa	9	8	38%	13%	13%	25%	0%	0%	0%
Northern Africa	8	6	50%	50%	33%	33%	50%	50%	33%
Southern Africa	5	4	0%	25%	0%	25%	0%	25%	25%
Western Africa	17	16	50%	19%	25%	19%	25%	19%	38%
Africa, Total	61	50	40%	26%	18%	26%	24%	24%	24%
WORLD	227	204	63%	48%	44%	46%	44%	46%	47%

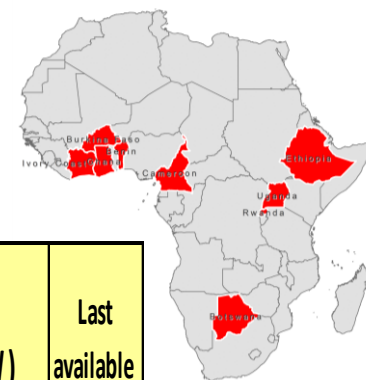


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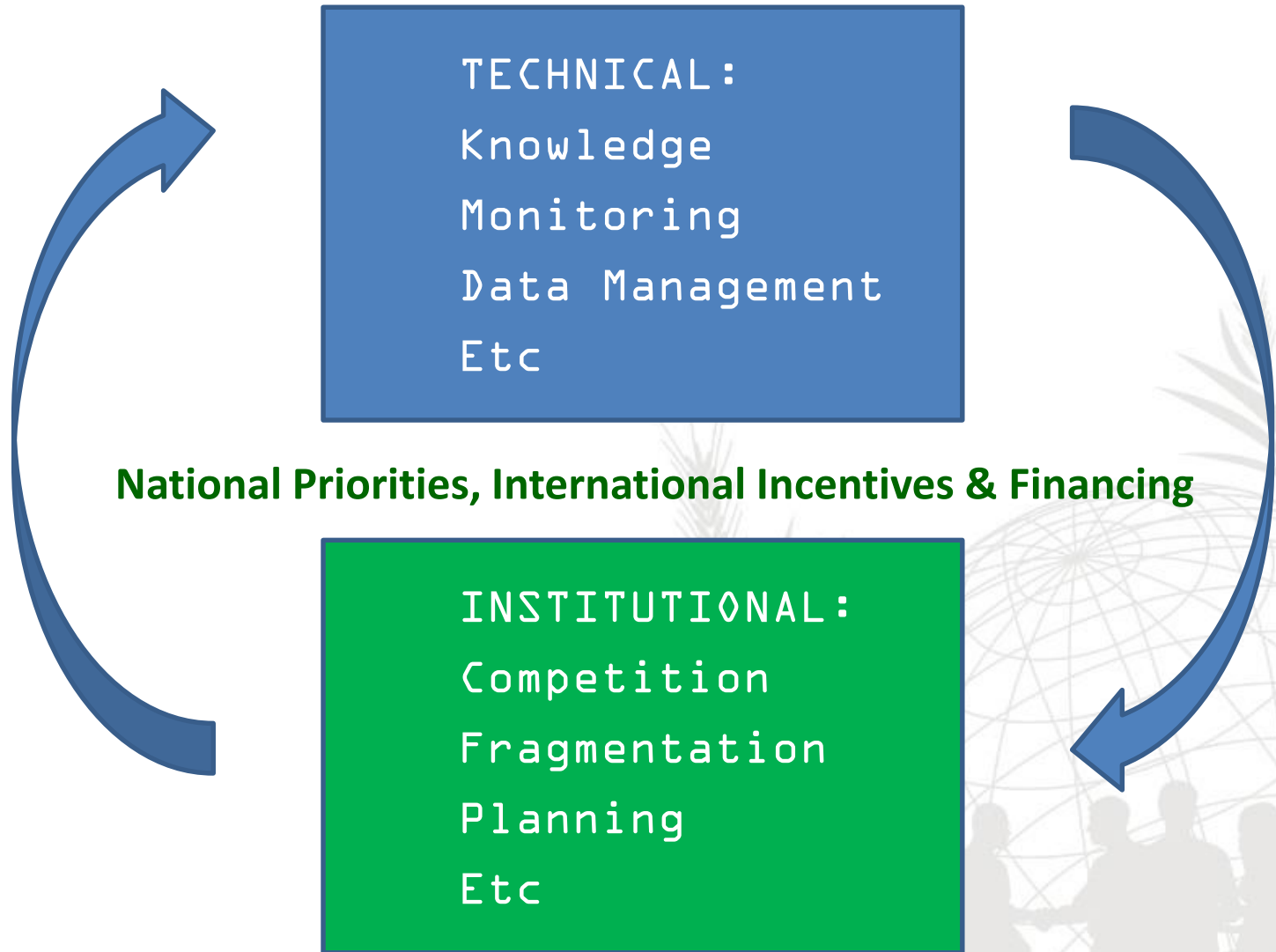
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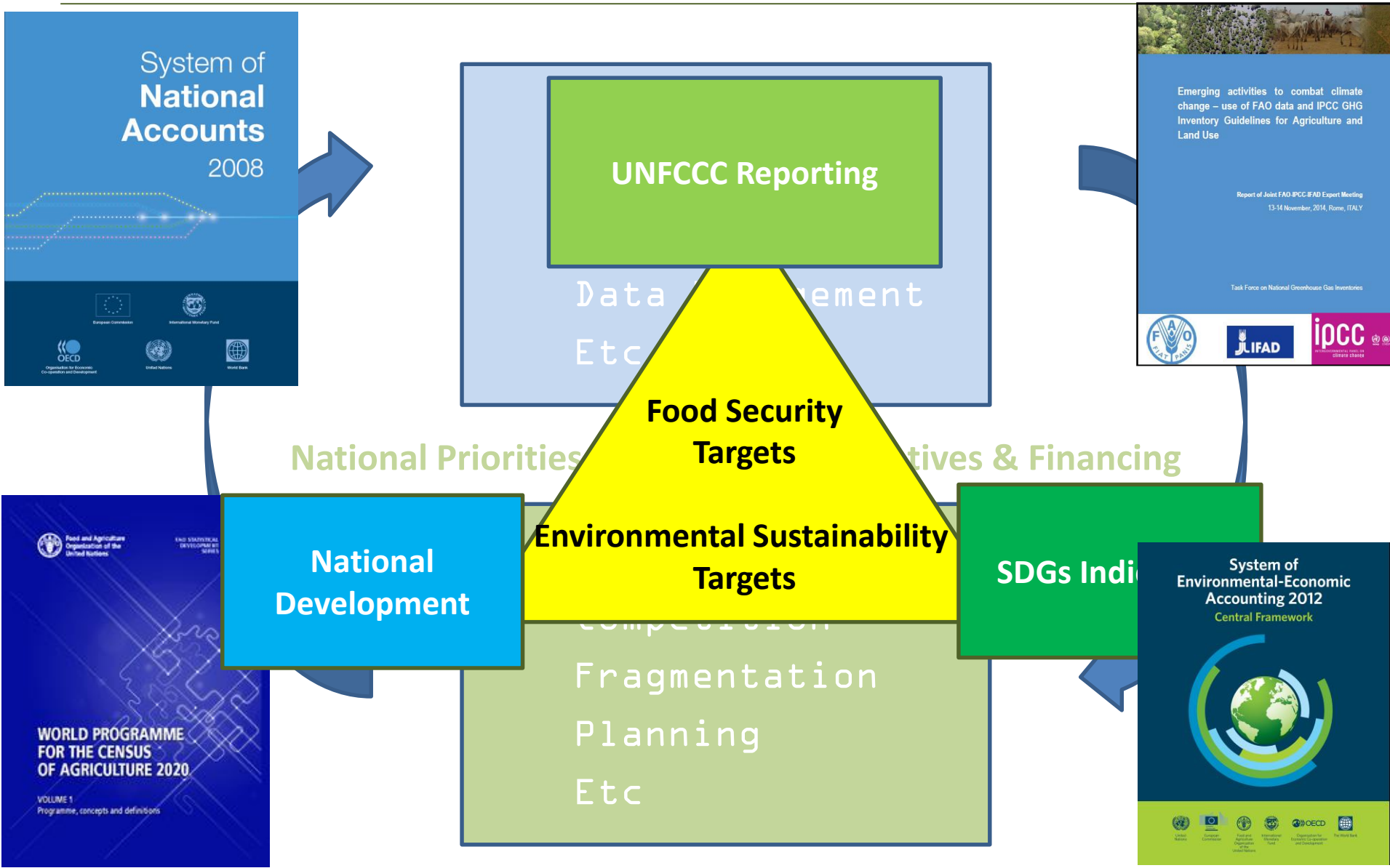
FAO code	Country	FAO Member	Region	Quest sent (Y/N) <sup>1</sup>	Questionnaires Received (=1 or 0 for each country; enter questionnaire total for World)								Last available year
					2007	2008	2009	2010	2011	2012	2013	TOTAL	
238	Ethiopia	1	Eastern Africa	Y	1	0	0	1	1	1	0	4	2012
184	Rwanda	1	Eastern Africa	Y	0	0	0	0	0	0	0		
226	Uganda	1	Eastern Africa	Y	0	0	0	0	0	0	0		
20	Botswana	1	Southern Africa	Y	0	0	0	0	0	0	1	1	2013
53	Benin	1	Western Africa	Y	0	0	0	0	0	0	0		
233	Burkina Faso	1	Western Africa	Y	1	0	1	0	0	0	0	2	2009
107	Côte d'Ivoire	1	Western Africa	Y	0	0	0	0	0	0	0		
81	Ghana	1	Western Africa	Y	1	1	0	0	0	0	1	3	2013
195	Senegal	1	Western Africa	Y	1	1	1	0	1	0	1	5	2013
	WORLD		WORLD	204	129	98	90	93	89	94	95	688	2013

# Data Challenges: Technical and Institutional

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# Opportunities: Technical and Institutional



# Incentives: Sustainable Development Goals

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Adopted by the UN on Sep 2015:

- 17 Goals (SDGs), 169 targets
- Agricultural-related targets are prominent
  - ❖ Goal 2, 13: Food Security & Nutrition
  - ❖ Goal 2: Sustainable Consumption and Food Systems
  - ❖ Goal 2, 13 and 15 : Sustainable Agriculture, Forestry, Fishery Production
  - ❖ Goal 2 and 15: Sustainable Use of Natural Resources
- Means of implementation, include statistics capacity development for improved monitoring through indicators



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## SDGs: Fertiliser-related targets

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- 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*
- 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and **soil pollution** and contamination
- 14.1: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and **nutrient pollution**

## Incentive:

### UN Framework Convention on Climate Change

Member Countries exchange information on greenhouse gas emissions, impacts, mitigation and adaptation:

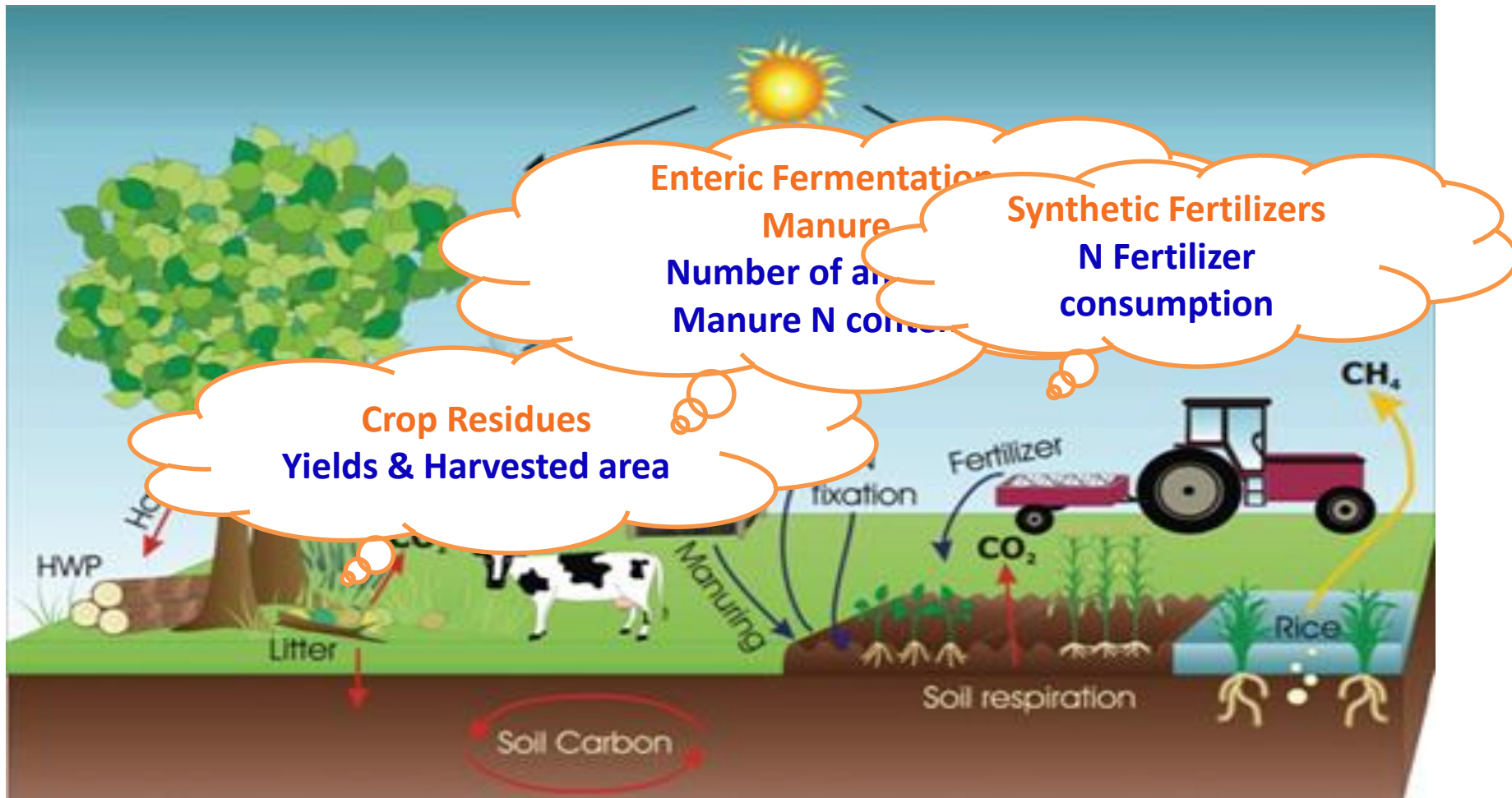
- Identify mitigation strategies that are consistent with food security, resilience and rural development goals
- Improve data and institutions to assess and report their GHG emissions from, agriculture, forestry and the land use sector –Inventories, BURs, NAMAs



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# Main statistics used for emissions estimates related to livestock manure



IPCC, 2006



# A Strategy for Country Implementation: Tiered Approach

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## **Tier 1: Compilation of accounts using global datasets of official country data, such as those communicate to FAO and disseminated via FAOSTAT**

- Based on official national data, useful for data gap filling, analysis and QA QC of more advanced accounting methods
- Focus on larger trend analysis and derivation of indicators
- Transparent and coherent basis for cross-country comparison

## **Tier 2: Use of available national level data**

- Use of nationally-relevant data appropriate for domestic action
- Additional detail and broader coverage of sector detail
- Offer increased analytical potential

## **Tier 3: Full implementation**

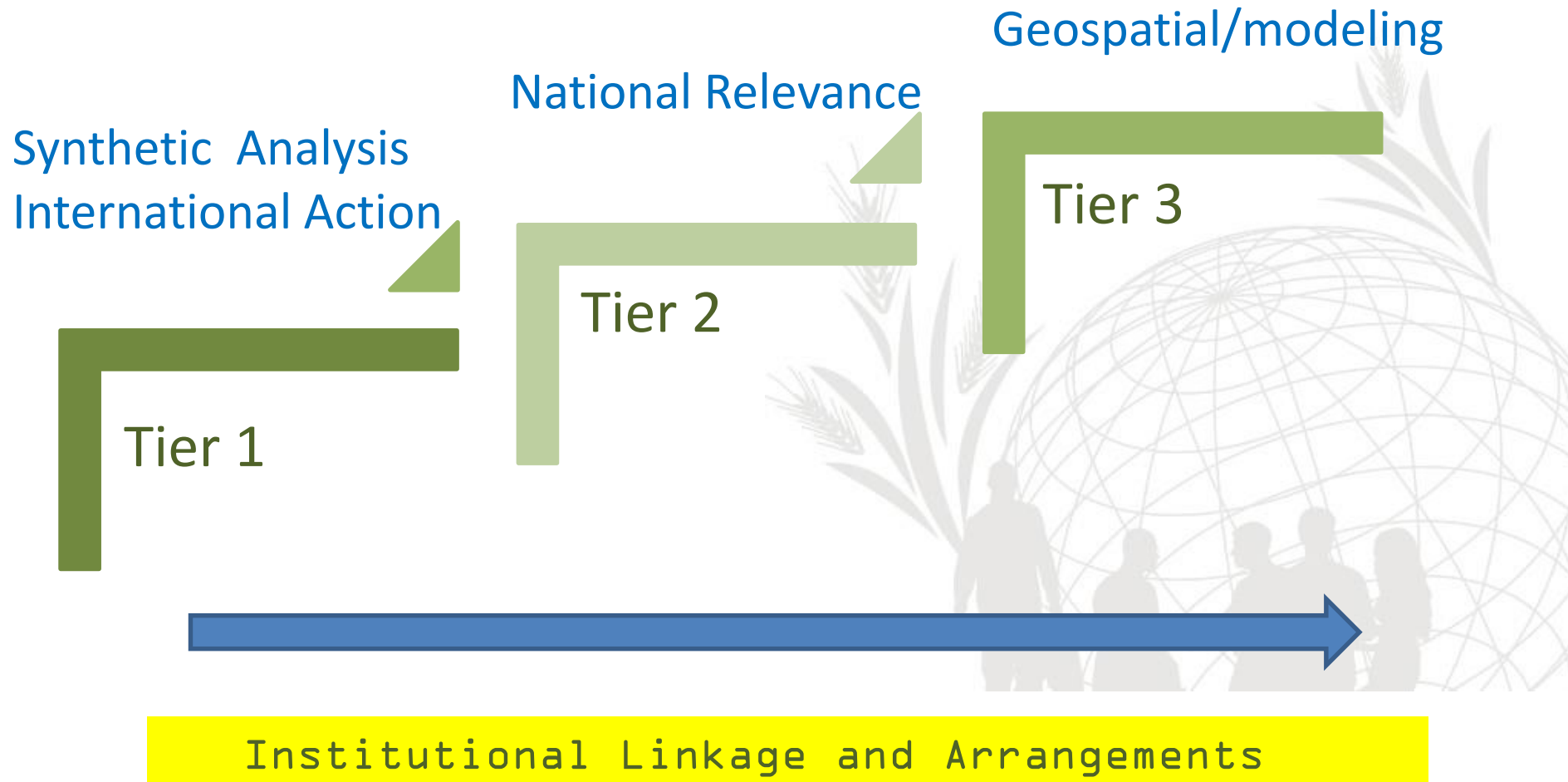
- Extend to sub-national, geo-spatial data
- Data and Model Integration
- Likely to require additional data collection, large data handling capacity





# A Phased Tiered Approach for integrating data

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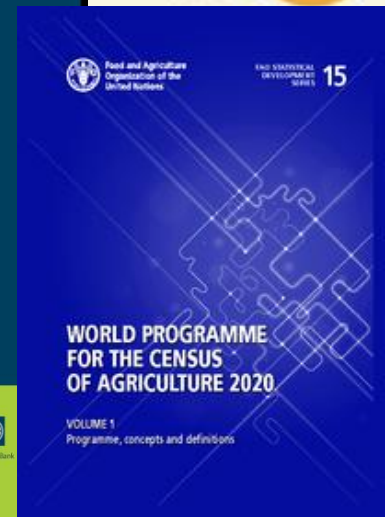
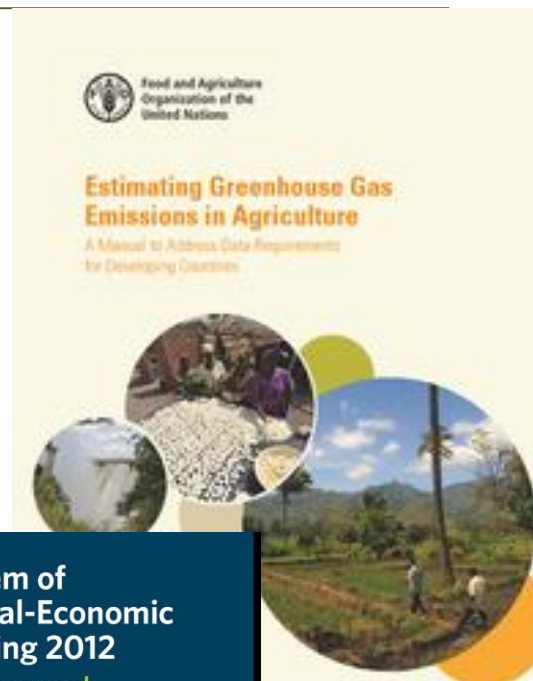
FAOSTAT

<http://faostat3.fao.org/browse/G1/GM/E>

Database on Emissions  
Includes Reference Tier 1  
Information on Manure

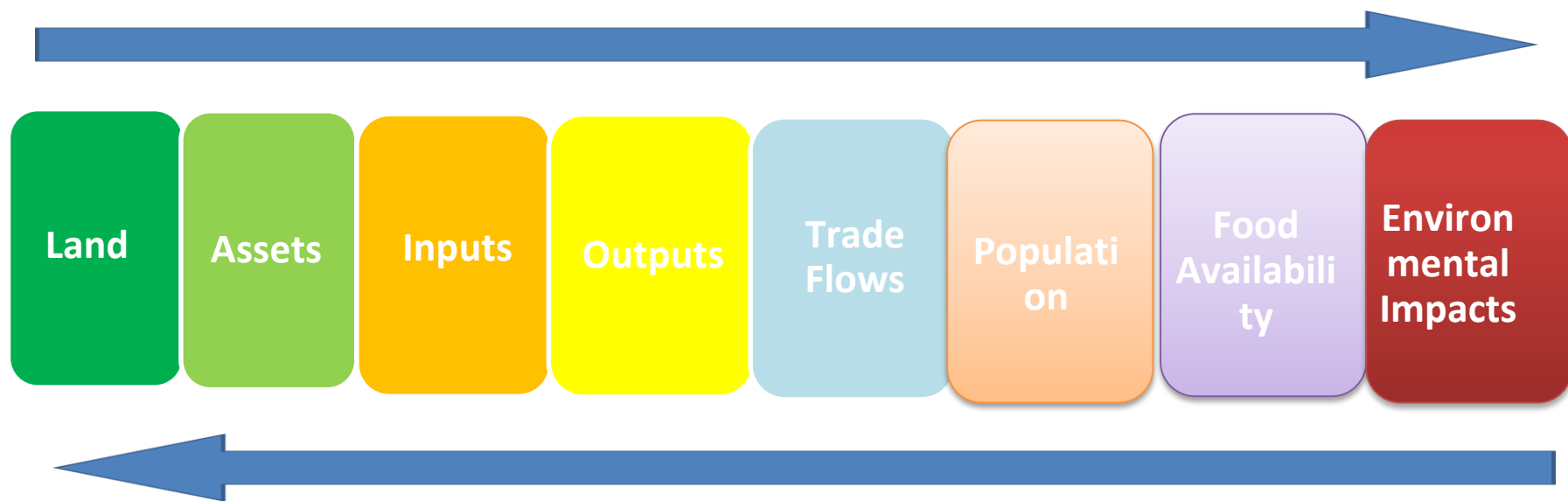
Used internationally for:

- Gap filling and trend analysis
- Quality Control, Quality Assurance of GHG Inventories
- Environmental-Economic Accounting
- Annex to WCA 2020



## SEEA Agriculture: A statistical Framework for integrating information and SDG indicators based on a phased tier approach

- The development of the **System of Environmental-Economic Accounting for Agriculture, Forestry and Fisheries** covers **agriculture, forestry and fisheries** activities, providing essential linkages across data domains for easy analysis



Physical flow accounts: manure management, manure left on pasture, manure applied to soils

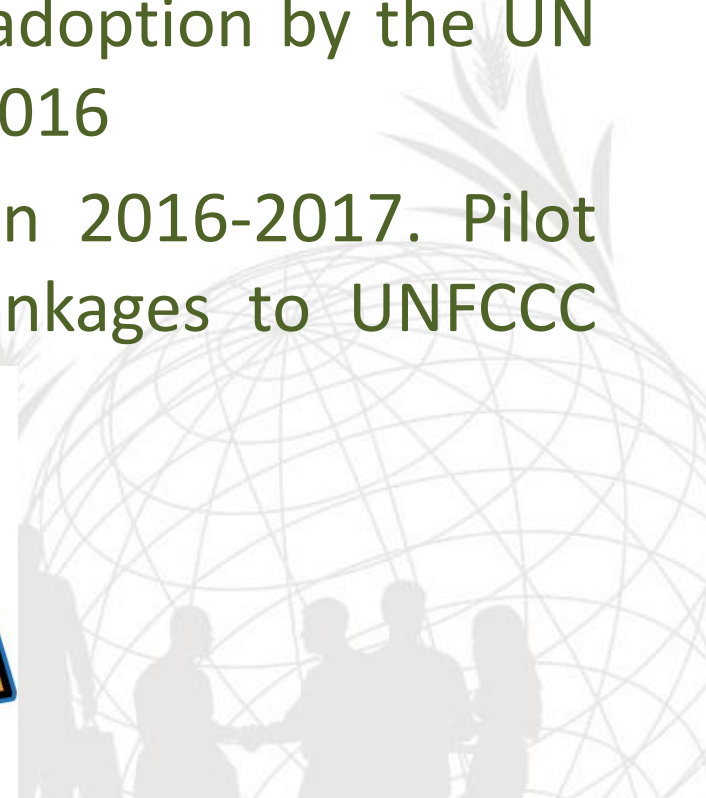
# SEEA Agriculture: A new UN Statistical Standard

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- Second Global Consultation planned Nov 30 2015-Jan 04 2016, in coordination with UN Statistical Division for finalization process
- Finalised SEEA-Agriculture for adoption by the UN Statistical Commission in Mar 2016
- Implementation in countries in 2016-2017. Pilot countries sought in Africa –Linkages to UNFCCC and SDG processes



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# Conclusions

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- Technical and Institutional gaps need to be bridged in order to address national and international priorities, building on a phased tiered approach
- International processes under UNFCCC and SDGs key incentive to improve statistics on sustainable fertilizer input to soils, through a SEEA statistical Framework
- **FAO can support Member countries in relation to:**
  - ✓ Guidance on performing surveys and census
  - ✓ Data analysis, quality assessment/quality control
  - ✓ FAOSTAT reporting processes
  - ✓ Methodological Development



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# Thank you!

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<http://www.fao.org/economic/ess/environment/en>

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