

*Regional Workshop on Statistical Literacy:
Increasing Effective Use of Agricultural and Rural Statistics
13-17 July 2015*

Session 1.1
**Policy and Data Issues in the
Agricultural and Rural Sectors**
(Focus: Food Security)



“The time has come for a total re-examination of the statistical needs for the 21st century and how they can best be met.”

Independent External Evaluation of the FAO (2006)

Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.



Agricultural and Rural Policy Issues

Low agricultural productivity

Ineffective marketing systems

Farm and non-farm income

**Managing risks and vulnerability
(from hazards, natural disasters)**

Food insecurity

Gender issues (women in agriculture)

Can only be effectively addressed, measured and evaluated with appropriate data & statistics

Source: WB, FAO, and UN. Global Strategy to Improve Agricultural and Rural Statistics.



Agricultural and Rural Statistics

Agricultural output

Trade (exports, imports in quantity and value)

Stocks of resources

Inputs (water, fertilizers, pesticides)

Final expenditure

Rural infrastructure

Demographics of urban or rural population

Environmental (soil degradation, pollution, emissions)

Addressing which policy issues?



Data issues

- * “The quantity and quality of data coming from national official sources has been on a steady decline since the early 1980s, particularly in Africa.”
- * Increasing demands for new statistics
- * Need to integrate data on agriculture, fisheries, and forestry
- * Etc.

Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.



The Global Strategy to Improve Agricultural and Rural Statistics

Better, faster and cost-effective collection of agricultural and rural data to support governments in making evidence-based policy decisions





Provides a framework for national and international statistical systems that enables them to produce and apply the basic data and information needed to guide decision making.

Source: WB, FAO, and UN. Global Strategy to Improve Agricultural and Rural Statistics.



Objective: to address a weakness in basic data and availability of information

Source: WB, FAO, and UN. Global Strategy to Improve Agricultural and Rural Statistics.





Outcome: target countries have sustainable systems that produce accurate and reliable data to inform and guide policy analysis and decision making

Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.



*Asia-Pacific
Regional Action
Plan to Implement
the Global Strategy*



Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.

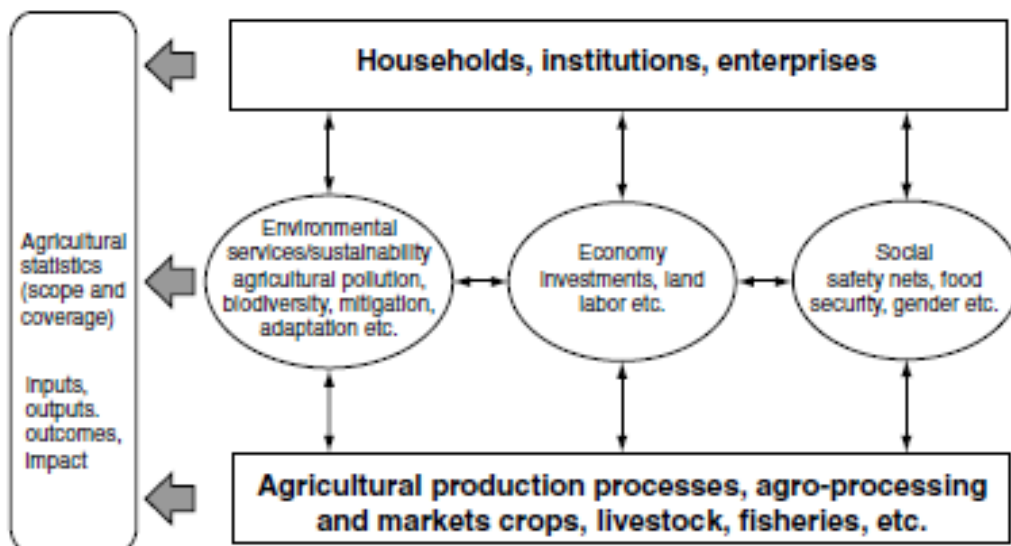


Conceptual Framework for the Collection of Agricultural Statistics



Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.

FIGURE 2: The conceptual framework for agricultural statistics

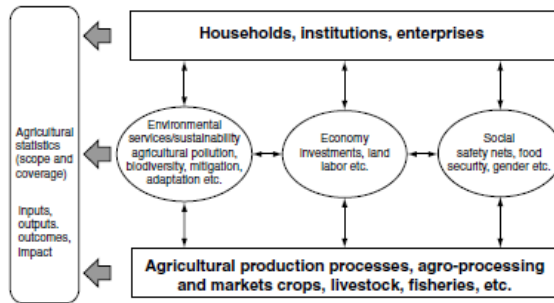


* Agricultural statistics are needed at each respective stage: inputs, outputs, outcomes, and ultimate impacts.

Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.



FIGURE 2: The conceptual framework for agricultural statistics



Agricultural statistics are needed at each respective stage: inputs, outputs, outcomes, and ultimate impacts.

Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.



Conceptual Framework for the Collection of Agricultural Statistics

- * Translates policy issues into statistical language by identifying the need for the:
 - * Survey framework to link the farm as an economic unit;
 - * The household as a social unit; and
 - * Land they occupy in the natural environment

- * Suggests that the fundamentals of the Global Strategy be based on three pillars

Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.



The THREE Pillars of the GSARS

Establish a **minimum set of core data** required to meet current and emerging demands

Integrate agriculture into the national statistical system to improve comparability across economic, social and environmental domains

Foster the sustainability of agricultural statistical systems through **governance and statistical capacity building**

Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.



Minimum Set of Core Data

TABLE 1: Minimum set of core data

GROUP OF VARIABLES	KEY VARIABLES	CORE DATA ITEMS	FREQUENCY*
ECONOMIC			
Output	Production	Core crops (e.g., wheat, rice, etc.)	Annual
		Core livestock (e.g., cattle, sheep, pigs, etc.)	
		Core forestry products Core fishery and aquaculture products	
	Area harvested and planted	Core crops (e.g., wheat, rice, etc.)	Annual
	Yield/births/productivity	Core crops, core livestock, core forestry, core fishery	Annual
Trade	Exports in quantity and value	Core crops, core livestock, core forestry, core fishery	Annual
	Imports in quantity and value	Core crops, core livestock, core forestry, core fishery	Annual
Stocks	Quantities in storage at beginning of harvest	Core crops	Annual
Stock of resources	Land cover and use	Land area	
	Economically active population	Number of people in working age by sex	
	Livestock	Number of live animals	
	Machinery	Number of tractors, harvesters, seeders, etc.	

Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.



Minimum Set of Core Data

TABLE 1: Minimum set of core data

GROUP OF VARIABLES	KEY VARIABLES	CORE DATA ITEMS	FREQUENCY*
ECONOMIC			
Inputs	Water	Quantity of water withdrawn for agricultural irrigation	
	Fertilizers in quantity and value	Core fertilizers by core crops	
	Pesticides in quantity and value	Core pesticides (e.g., fungicides herbicides, insecticides, disinfectants) by core crops	
	Seeds in quantity and value	By core crops	
	Feed in quantity and value	By core crops	
Agro processing	Volume of core crops/livestock/fishery used in processing food	By industry	
	Value of output of processed food	By industry	
	Other uses (e.g., biofuels)		
Prices	Producer prices	Core crops, core livestock, core forestry, core fishery	
	Consumer prices	Core crops, core livestock, core forestry, core fishery	
Final expenditure	Government expenditure on agriculture and rural development	Public investments, subsidies, etc.	
	Private investments	Investment in machinery, in research and development, in infrastructure	
	Household consumption	Consumption of core crops/livestock/etc. in quantity and value	
Rural infrastructure (capital stock)	Irrigation/roads/railways/communications	Area equipped for irrigation/roads in km/railways in km/communications	
International transfer	ODA ^a for agriculture and rural development		

Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.



Minimum Set of Core Data

TABLE 1: Minimum set of core data

GROUP OF VARIABLES	KEY VARIABLES	CORE DATA ITEMS	FREQUENCY*
SOCIAL			
Demographics of urban and rural population	Sex		
	Age in completed years	By sex	
	Country of birth	By sex	
	Highest level of education completed	One digit ISCED by sex	
	Labor status	Employed, unemployed, inactive by sex	
	Status in employment	Self employment and employee by sex	
	Economic sector in employment	International standard industrial classification by sex	
	Occupation in employment	International standard classification of occupations by sex	
	Total income of the household		
	Household composition	By sex	
	Number of family/hired workers on the holding	By sex	
	Housing conditions	Type of building, building character, main material, etc.	

Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.



Minimum Set of Core Data

TABLE 1: Minimum set of core data

GROUP OF VARIABLES	KEY VARIABLES	CORE DATA ITEMS	FREQUENCY*
ENVIRONMENTAL			
Land	Soil degradation	Variables will be based on above core items on land cover and use, water use, and other inputs to production.	
Water	Pollution due to agriculture		
Air	Emissions due to agriculture		
GEOGRAPHIC LOCATION			
GIS coordinates	Location of the statistical unit	Parcel, province, region, country	
Degree of urbanization	Urban/Rural area		

Source: WB, FAO, and UN.Global Strategy to Improve Agricultural and Rural Statistics.



“Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.”

Food Security



FAO Parameters on Food Security

- **Availability:** Household food production and crop diversity
- **Access:** Percentage food expenditure to total household expenditures
- **Utilisation:** Degree of access to services (water, health and sanitation)
- **Stability:** Stability of food prices and supply

Source: Masters, Eliot. Indicators of Food Security.



Food Security Indicators - Availability

Type of indicator	Source	Coverage
Availability		
Average dietary energy supply adequacy	FAO	1990-2016
Average value of food production	FAO	1990-2013
Share of dietary energy supply derived from cereals, roots and tubers	FAO	1990-2011
Average protein supply	FAO	1990-2011
Average supply of protein of animal origin	FAO	1990-2011

Source: FAO. Food Security Indicators. <http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.VZtdtctO6UK>



Food Security Indicators - Access

Access

Percent of paved roads over total roads	WB	1990-2011
Road density	International Road Federation, World Road Statistics and electronic	1990-2011
Rail lines density	WB	1990-2012
Gross domestic product per capita (in purchasing power equivalent)	WB	1990-2013
Domestic food price index	FAO/ILO/WB	2000-2014
Prevalence of undernourishment	FAO	1990-2016
Share of food expenditure of the poor	FAO	partial
Depth of the food deficit	FAO	1990-2016
Prevalence of food inadequacy	FAO	1990-2016

Source: FAO. Food Security Indicators. <http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.VZtdtctO6Uk>



Food Security Indicators - Stability

Stability

Cereal import dependency ratio	FAO	1990-2011
Percent of arable land equipped for irrigation	FAO	1990-2012
Value of food imports over total merchandise exports	FAO	1990-2011
Political stability and absence of violence/terrorism	WB/WWGI	1990-2013
Domestic food price volatility	FAO/ILO/WB	2000-2014
Per capita food production variability	FAO	1990-2013
Per capita food supply variability	FAO	1990-2011

Source: FAO. Food Security Indicators. <http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.VZtdtctO6Uk>



Food Security Indicators - Utilization

Utilization		
Access to improved water sources	WHO/UNICEF	1990-2012
Access to improved sanitation facilities	WHO/UNICEF	1990-2012
Percentage of children under 5 years of age affected by wasting	WHO/UNICEF	1990-2014
Percentage of children under 5 years of age who are stunted	WHO/UNICEF	1990-2014
Percentage of children under 5 years of age who are underweight	WHO/UNICEF	1990-2014
Percentage of adults who are underweight	WHO	partial
Prevalence of anaemia among pregnant women	WHO/WB	1990-2011
Prevalence of anaemia among children under 5 years of age	WHO/WB	1990-2011
Prevalence of vitamin A deficiency in the population	WHO	partial
Prevalence of iodine deficiency	WHO	partial

Source: FAO. Food Security Indicators. <http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.VZtdtctO6Uk>



This Course ...

Aware of...
Understand...
Analyse and use...
Communicate...

these statistics?

Source: FAO. Food Security Indicators. <http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/#.VZtdtctO6Uk>



Thank You!

