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Agricultural Census and Surveys and the role of FAO

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- VI. The Agriculture and Rural Integrated Survey (AGRIS)**



I. Background of WCA: FAO role and rounds

What is a census of agriculture and why is it needed?

What?

Large-scale statistical operation for collecting, processing and disseminating data on the structure of agriculture

Structural data collected :

- size of holding
- land tenure
- land use
- crop areas
- irrigation
- livestock numbers
- Labour, machinery and other inputs.

Why?

Unique source :

- **Data on the structure of agriculture** for small administrative units
- **benchmark** for agricultural statistics
- **sampling frames** for agricultural surveys

Unique opportunity:

- Mobilize resources and renew attention on agricultural statistics
- Build **capacity** of statistical organizations



I. Background of WCA: FAO role and rounds – cont'd



FAO is the UN- leading agency for WCA Programme



- **9 WCA rounds**, since 1930 have been conducted
 - IIA*: 2 rounds (1930 and 1940 - unfinished)
 - FAO: 7 rounds (1950, 1960, 1970, 1980, 1990, 2000, 2010)
- **WCA 2010** (2006-2015) ongoing, ends in 2015
- Every 10 years FAO revises the Programme based on countries' experiences, lessons learnt and new data needs
- **WCA 2020 Programme** will cover 2016-2025



II. Status of implementation of WCA 2010 round

Participation of countries and territories in the WCA rounds

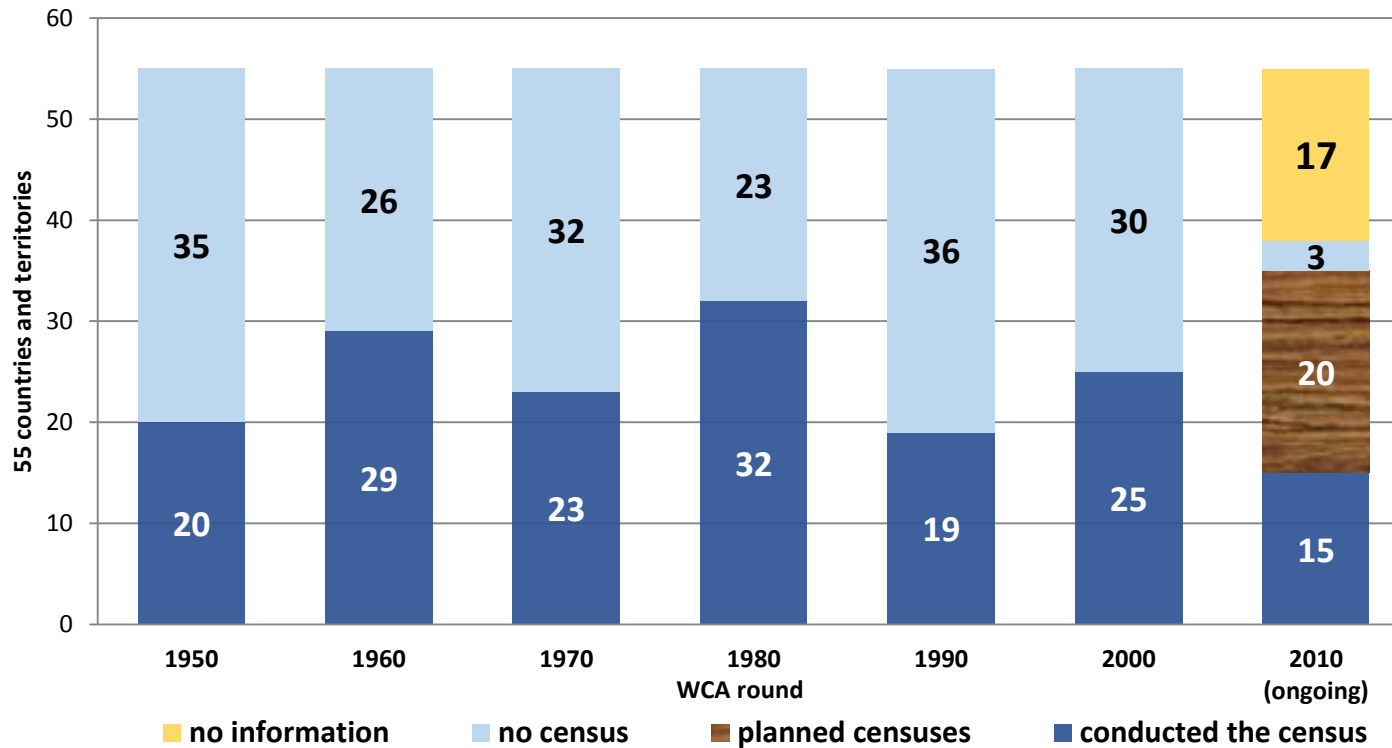
Region	1960	1970	1980	1990	2000	2010 (As of 2014)
No. of participating countries	100	111	103	90	122	111
Africa (55)	28	25	23	20	25	15
North and Central America (27)	19	23	18	16	14	16
South America (13)	11	10	7	7	8	9
Asia (48)	19	19	21	14	29	26
Europe (39)	17	24	22	20	29	35
Oceania (19)	6	10	12	13	9	10

*The number in the brackets in the first column is the current number of countries in each region



II. Status of implementation of 2010 round - cont'd

Implementation of censuses by rounds in Africa



II. Status of implementation of 2010 round – cont'd

FAO involvement in censuses in Africa

- During the WCA 2010 round 35 out of 55 african countries have conducted (15) or are planning to conduct (20) an agricultural census
- FAO has provided technical assistance through TCPs/GSPs/UTFs to 24 African countries.

Completed projects (10):

Gambia, Lybia*, Mauritania*, Sao Tome and Principe, Togo, Niger, Burkina Faso, Mozambique, Leshoto, Seychelles

Ongoing projects (13):

Angola, Cabo Verde, Cameroon, Chad, Comoros, Republic of Congo, Cote d'Ivoire, Ghana, Mali, Mauritius, Namibia, Senegal and Sudan, UEMOA (Togo, Cote d'Ivoire, Senegal)





II. Status of implementation of 2010 round – cont'd

Cocoa in agricultural censuses in Africa

7 countries in Africa have collected census data on cocoa: Tanzania, Cote d'Ivoire, Guinea, Madagascar, Togo, Uganda, Ghana

The main census items collected on cocoa are:

- area cultivated (planted)
- production
- number of trees



II. Status of implementation of WCA 2010 round - cont'd

Integrated Agricultural Census and Survey Programme

i. Census of Agriculture:

- Core census module (complete enumeration): 16 data items
- Census supplementary module(s) (sample enumeration): 12 themes with 87 data items
- Community level data: 32 data items

ii. Thematic agricultural surveys: in-depth surveys to be undertaken after the agricultural census, using the agricultural census as a frame:

- Crops
- Livestock
- Aquaculture, etc.



III. Agricultural surveys

- An **agricultural survey** is an in-depth survey conducted after the agri-census, usually using the agri-census as a frame
- Ideally it should be periodic and part of a programme of agri-surveys. Examples:

Crops

- Crop production (annual or seasonal), e.g. semi-annual rice production and annual cocoa production
- Crop forecasting: i) plating intentions (before planting); ii) crop planting (after planting); iii) crop conditions (before harvest); and iv) crop production (after harvest).
- Others: post-harvest losses, food stocks, crop marketing



III. Agricultural surveys - examples

Livestock

- Cow milk production
- Wool production
- Others: feed (by livestock type and season), fodder crop production, herds structure, sales

Farm management and others

- Decision-making (investments, assets, organizational structure and allocation of resources)
- Cost of production (operational costs, such as inputs and fixed costs such as land and equipment)
- Time use: contribution of household members to activities on the holding (land preparation; planting, harvesting, etc.)



III. Agricultural surveys – recommend.

- Countries should plan the programme of agri-surveys prior to the agri-census
- This ensures integration and meeting the needs of the programme of agri-surveys



III. Agricultural surveys – sampling design

Single and multi-stage sampling for cocoa survey: an example

Single sampling (non-household sector)

- Maintain an up-to-date list for non-household cocoa producers (e.g. large commercial producers). Use this list to select a single-stage sample for those units and enumerate them.

Multi-stage sampling (household sector)

- Select a sample of agri-census EAs (using stratification and probability proportional to size sampling) based on census cocoa data (preference to important cocoa growing areas).
- Prepare a list of cocoa producers in each sample EA, by updating lists of units available from the census.
- Select a sample of cocoa producers in each sample EA, and enumerate those units for the survey.

Note. In multi-stage sampling, it is not necessary to maintain up-to-date lists of holdings, but it is necessary to have up-to-date administrative units. This can be a problem if administrative boundaries change frequently.



IV. WCA 2020 Programme

Main new features

- Close linkage to the **Global Strategy** to Improve Agricultural and Rural Statistics:
 - Census of agriculture is a source for the **minimum set of core data** of the GS (first pillar).
 - The census contributes to **integration of agriculture into the national statistical system** through the master sampling frame and an integrated census-survey programme (second pillar). *AGRIS* will be instrumental in this.
 - The census involves a comprehensive **capacity building** exercise (third pillar)
 - The reader will be referred to the **Global Strategy's publications**.

IV. WCA 2020 Programme – cont'd

Main new features

Discusses the **two most common** methodologies:

a. Traditional approach (*still widely used*)

Conducted as a single operation, includes all essential/structural items plus some additional items.

- Appropriate for countries having integrated census-surveys programme or wishing to collect some “additional” items on low administrative level.

b. Modular approach (*introduced in WCA 2010*)

With a clearly distinguishable core module and supplementary module(s). Core module serves as the frame for the supplementary module(s).

- Useful to countries where the census-survey programme not well developed and the conduct of modules over a period of time can lay the foundations for an integrated agri-census & survey programme.





IV. WCA 2020 Programme – cont'd

Main new features

Census items: distinction between essential, frame and additional items :

- **Essential items (23)** –for national purposes and international comparability. All countries recommended to collect both in traditional and modular approaches.
- **Frame items (15)** – necessary for the establishment of frames for supplementary modules under the modular approach or follow-up surveys.
- **Additional items (96)** – to collect more in-depth supplementary data on specific themes. Apply to both traditional and modular approaches.

In response to increasing demands for data, the WCA 2020 has also increased the number of census items. However, some 'additional' items could not be considered as 'structural' (not changing rapidly over time) and might be better suited to the statistical survey programme.



IV. WCA 2020 Programme – cont'd

Main new features

- Introduction of **two new Themes**: ‘Fisheries’ and ‘GHG/Environment’. The Theme ‘**Agricultural practices**’ has extended the items on sustainable agriculture.
- **Use of information technology (IT)** - increased emphasis on IT in data collection, processing and dissemination. Examples:
 - Computer- assisted personal interview (CAPI), e.g tablets
 - Geo-referencing
 - Use of interactive outputs and web-based data
 - Access to anonymised micro-data



IV. WCA 2020 Programme – cont'd

Main Changes: Themes/Items

No	Theme	Changes*
1	Identification	ID items put together in this theme. Four new items
2	Land	Updated according to SEEA, 2012. One item modified
3	Irrigation	Two new items
4	Crops	Two new items
5	Livestock	One new item
6	Agr practices	Four new items (sustainable agriculture), one omitted
7	Agr services	-
8	Demographic	One new item, one omitted

* New items include re-introduced items and components of existing items



IV. WCA 2020 Programme – cont'd

Main Changes: Themes/Items

No	Theme	Changes*
9	Work	Updated according to ILO, 2013. One new item, one modified, two omitted
10	Intra-hh decision	Approach changed. Five new items, six omitted
11	Food security	Methodology changed. One new item, four omitted
12	Aquaculture	-
13	Forestry	Updated according to SEEA. Two items modified
14	Fisheries	A new theme altogether. Seven new items
15	GHG/Environment	A new theme altogether. Seven new items

* New items include re-introduced items and components of existing items

V. Global Strategy for Improving Agricultural Statistics

- The UNSC adopted in 2011 the “Global Strategy to Improve Agricultural and Rural Statistics”.
- The Global Strategy is based on 3 pillars:
 1. **Minimum set of core national data items:** e.g. about 10 crops and 4 livestock species account for over 95% of world production of cereals, meat and fiber.
 2. **Integrate agriculture into national statistics system:** Common Sampling Frame, a survey & census programme framework, integrated databases, geo-referencing.
 3. **Better governance and capacity building:** establish a National Statistics Council to coordinate stakeholders’ efforts; training, equipment, info technology.





V. Global Strategy - cont'd

- A key recommendation of the GS: agriculture should be integrated into the national statistical system.
- Its Action Plan has the following components:
 - a comprehensive technical assistance programme;
 - an articulated training programme; and
 - a well targeted research agenda.
- In Africa, the GS is implemented by FAO (research), AfDB (technical assistance), UNECA (training).
- Assessment of country capacity in two stages:
 - Assessment of country capacity to produce agricultural and rural statistics (by countries)
 - In-depth country assessments (in-country missions)



V. Global Strategy – cont'd

Training component: *Short-term and in-service training in agricultural statistics*

- Four syllabuses for short-term and in-service training in agri-stats, translated into English and French, will soon be available to selected Statistical Training Centers:
 - Agricultural Census and Survey
 - Agricultural Data Processing
 - Economic Accounts for Agriculture
 - Sampling design for Agricultural Surveys
- The students attend their studies at the following 4 STCs which have signed a MoUs:
 - ENSEA- Abidjan
 - ENSAE- Dakar
 - SSP- Makerere in future
 - EASTC Dar Es Salaam
 - ISSEA-Yaounde



V. Global Strategy – cont'd

Technical Assistance

Main findings of the 1st Stage of Country Assessment (CA)

- The capacity for African countries to produce timely and reliable agricultural statistics measured objectively and in a standard way by Agricultural Statistical Capacity Indicators (ASCI). Four dimensions:
 - Institutional infrastructure
 - Resources
 - Statistical methods and practices
 - Availability of statistical information
- A composite/aggregated indicator calculated to measure the development level of national agricultural statistical system
- Countries ranked according to their ASCI levels and grouped by ASCI and GDP/Agric value-added levels
- Country profiles being established



V. Global Strategy – cont'd

Technical Assistance

Technical Assistance being provided to countries on Strategic Plans for Agricultural and Rural Statistics (SPARS)

- Roadmaps developed/approved or launched for:
Benin, Burundi, Cabo Verde, Cote d'Ivoire, Senegal and Kenya
- SPARS completion for:
Benin, Burundi and Cabo Verde by early 2015; Senegal and Kenya by mid-2015; Cote d'Ivoire –TBA
- SPARS development at the launching stage:
Sudan – To be completed by June 2015
- Country requests for TA on SPARS development:
Botswana, Burkina Faso, Congo Democratic Rep., Gambia, Madagascar, Niger, Nigeria, Rwanda, and South Africa
- Support Tanzania for preparing SPARS – USDA/FAO/AFDB joint missions



VI. The Agriculture and Rural Integrated Survey (AGRIS)

Why AGRIS?

- Need to provide countries with an *integrated agricultural survey option* for collecting Minimum Set of Core Data (MSCD) using methodologies developed under the Global Strategy.

What is AGRIS?

- A methodology for a *standardized multipurpose and modular survey* on agricultural holdings, which aims at collecting MSCD and other relevant agricultural and rural data on a **regular basis**
- Use of methods and tools developed under the Global Strategy
- Build on and strengthen *existing survey activities* going on in countries

VI. The Agriculture and Rural Integrated Survey (AGRIS)

AGRIS – Main Issues

Modular Structure	<p>Core Module: yearly data collection on <i>current</i> agricultural production integrated with economic and socio-demographic statistics</p> <p>Rotating Module on Specific Topics data to collect every two, three years or four years (sub-samples can also be used)</p>
Statistical Units	Agricultural Holdings : household sector (with associated households) and non-household sector
Frames	<p>For the non-Household sector the sampling basis could be the most appropriate list frame among the agricultural census and administrative registers</p> <p>For the Household sector, either an area frame (segments or points) or the Enumeration Areas derived from the Censuses (Agriculture or Population), or administrative areas (municipalities...).</p>
Sample design	Design fitted to the specific frame (use of MSF and ISF guidelines).
Data collection process	Use of GS data collection methods, including GPS, CAPI, RS





VI. The Agriculture and Rural Integrated Survey (AGRIS)

Core and module organization

Example of a possible plan: Core + 1 module each year

Year	Core (yearly data)	Module 1 labour force	Module 2 Economy	Module 3 Machinery, equipment	Module 4 Production methods
2015	X		X		
2016	X	X			
2017	X				X
2018	X			X	
2019	X		X		
2020	X	X			
2021	X				X
2022	X			X	
2023	X		X		



VI. The Agriculture and Rural Integrated Survey (AGRIS)

Core and module organization

Example of a possible plan: Core + 2 modules each year (Heavier)

Year	Core	Module 1 labour force	Module 2 Economy	Module 3 Machinery, equipment	Module 4 Production methods
2015	X	X	X		
2016	X			X	X
2017	X	X	X		
2018	X			X	X
2019	X	X	X		
2020	X			X	X
2021	X	X	X		
2022	X			X	X
2023	X	X	X		



THANK YOU!

