



Food and Agriculture  
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### **Session SC2 - Integrated Statistics for integrated analysis**

# **Integrating agricultural statistics to face increased data demands**

**Jairo Castano, PhD**

Leader, Agricultural Censuses Team

UN Food and Agriculture Organization (FAO), Statistics Division



# Contents

1. **Background**
2. **Introduction**
3. **Frequency of agricultural census**
4. **Integrating the system of censuses and surveys**
  - a) Identifying the specific role of the census
  - b) Focusing the census of agriculture on structural items
  - c) Integrating the census with periodic rotating surveys
  - d) Using data from administrative sources
  - e) Integrating the agricultural and population censuses
5. **Conclusions**



# 1. Background

- FAO is the leading UN agency for providing technical guidelines and support to member countries for the conduct of national censuses of agriculture.
- Every 10 years, FAO publishes and disseminates the guidelines *World Programme for the Census of Agriculture (WCA)*.
- The latest guidelines are the *WCA 2020* that covers agricultural censuses undertaken between 2016 and 2025.
- This was complemented with the “*Operational Guidelines*” to provide practical guidance on census implementation.
- A key WCA 2020 recommendation: the census of agriculture must not be carried out in isolation but as a component of an integrated system of agricultural censuses and surveys.



## 2. Introduction

- The SDGs have presented new demands for more data and challenges in terms of monitoring and reporting progress towards their achievement.
- While some progress on accessing existing information has been made thanks to open and big data, critical gaps on data production still remain in many countries.
- This is partially due to lack of adequate coordination of data collection operations.
- An integrated agricultural statistics system involving a multi-year programme of agricultural surveys articulated with the agricultural census is of crucial importance.
- This presentation makes some recommendations to better integrate these data collection operations to face increased data demands.





### 3. Frequency of agricultural census (AC) lags behind

- According to the FAO WCA 2020, countries should conduct one AC at least once every ten years.
- The AC should provide key structural items (23 essential items) and frame items for inter-censal sample surveys.
- Although country participation in the AC rounds has increased steadily since the 1990s, the number remains relatively small.
- While **127** countries/territories conducted an AC in the 2010 round (*a new record!*), **214** conducted a population and housing census (PHC).



## No. of countries and territories that participated in the 2010 census round

Region	Population and housing census	Agricultural census
Africa	49	22
North and Central America	36	18
South America	14	10
Asia	43	29
Europe	48	36
Oceania	24	12
<b>World Total</b>	<b>214</b>	<b>127</b>

Source: FAO and UNSD, 2019

Note: The 2010 round of PHCs covered 2005-2014 while that of the ACs covered 2006-2015.



### 3. Frequency of agricultural census (cont'd)

- Implication 1: many countries do not have neither up-to-date structural agri-data nor frames for agricultural surveys.
- Implication 2: This has an impact on the reliability of current statistics emanating from surveys implemented without a reliable frame.



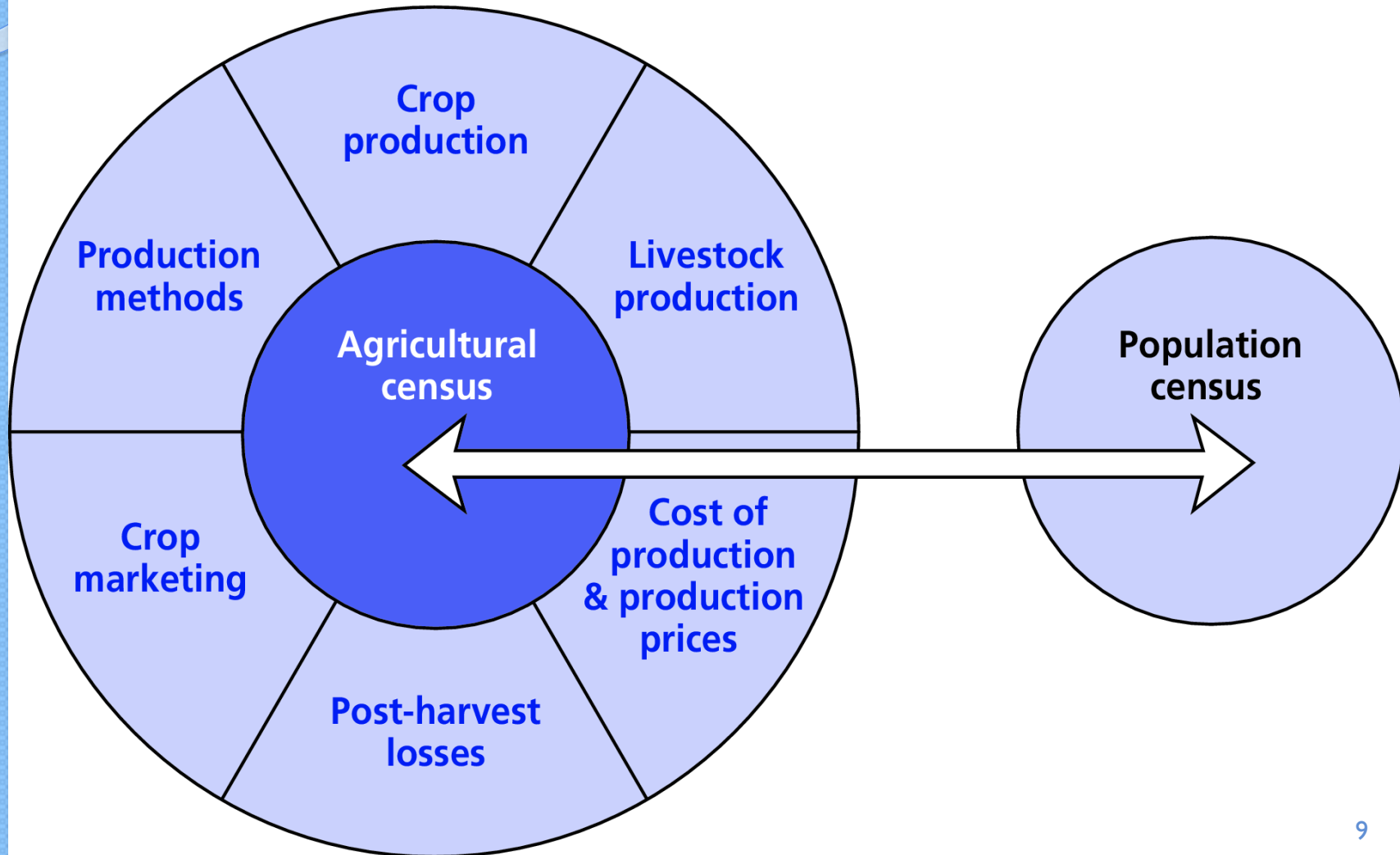
## 4. Integrating the system of censuses and surveys

- The integration of censuses and sample surveys may bring advantages to the overall statistical system, such as:
  - Better coherence by using standard concepts, definitions and classifications;
  - Improving quality by avoiding the release of conflicting statistics;
  - Reducing response burden, and, ultimately, enhancing understanding and use of statistics by users;
  - Preventing duplication of statistical activities and waste of resources.
- In this system, the AC can focus on a manageable set of structural items, while other (non-structural) data, needed more frequently, are available through sample surveys and other sources.



## 4. The system of integrated agricultural census and surveys

### Agricultural surveys





## 4. Integrating agri-censuses and surveys (cont'd)

- The FAO WCA 2020 recommends some actions to move towards a more integrated system (no mutually exclusive):
  - a) Identifying the specific role of the AC.
  - b) Focusing the content of the census of agriculture on structural items.
  - c) Integrating the census with periodic rotating surveys.
  - d) Using data from administrative sources.
  - e) Better integrating the agricultural and population censuses.



## 4.a Identifying the specific role of the AC

- In countries with underdeveloped agricultural statistics system, the AC (when conducted) is an isolated one-off operation mobilizing a lot of resources in a short period of time, followed by several years of data discontinuity.
- The first major step in preparation for an upcoming AC is identifying its role and objectives in the system of integrated agricultural censuses and surveys.
- A good strategic plan (like the Strategic Plan for Agriculture and Rural Statistics (SPARS\*), mainstreamed into the National Strategy for the Development of Statistics (NSDS), should be pursued.
- This plan ensures that both the AC and surveys complement each other and together generate the required statistics with the appropriate frequency.





## 4.b Focusing the AC content on structural items

- Including too many items in the census questionnaire is counterproductive. The AC should include only key structural data.
- Structural items include: size of holdings, land use, crop areas, livestock numbers and agricultural inputs which are collected every five/ten years at the lowest geographical level.
- Non-structural items: crop and livestock production, food consumption, farm management and agricultural prices, which are collected more regularly through sample surveys and/or admin reporting systems.
- For national and international comparability, the WCA 2020 classifies census items into three categories:
  - i. **essential** items (23 items in total) → *structural, all must be included*
  - ii. **frame** items (15, of which 6 are also essential) → *frame for follow-up surveys*
  - iii. **additional** items → *others only if small-area estimates are required*



## 4.c Integrating the CA with rotating surveys

- This is a new modality introduced in WCA 2020 to produce a wide range and regular flow of data by rolling out the collection of thematic data over the inter-census period.
- It features a *census core module* (complete enumeration) and a number of several rotating thematic modules (conducted annually or periodically on sample basis over a 10-year period).
- An example of a programme with rotating thematic modules is FAO's Agricultural Integrated Survey programme (AGRIS).
- The census core and rotating thematic modules should cover all essential items.
- The census core module should mainly provide frame data needed to implement rotating thematic modules.
- Countries without a well-established census and survey programme may find this modality as an important initial step. FAO and partners are providing support.

## 4.c Illustration of integrated CA with rotating surveys



YEARS		0	1	2	3	4	5	6	7	8	9	10
Agricultural census core module and (if applicable) annual production survey <sup>37</sup>		✓										✓
AGRIS Annual Production Module <sup>38</sup>	Crop + Livestock production + other key variables (economy, labour, etc.)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotating Module 1	Economy				✓		✓		✓		✓	
Rotating Module 2	Labour			✓				✓				
Rotating Module 3	Machinery, Equipment, Asset and Decisions						✓					
Rotating Module 4	Production methods and Environment					✓				✓		



## 4.d Using data from administrative sources

- A growing number of NSOs, particularly in developed countries, are moving towards increasing the use of data from administrative sources for their ACs.
- These efforts seek to:
  - i. reduce burden on respondents;
  - ii. generate more frequent data with reduced costs;
  - iii. avoid collecting data that are already available through the administrative process;
  - iv. ensure integration of data sources and use of standard concepts/definitions and classifications.
- This modality (also discussed in WCA 2020) requires that census agencies have access to administrative data (individual records).
- The census agency should decide what items are suitable to be sourced from available administrative data sources (and thus excluded from the census questionnaire) and those to be obtained through census enumeration.
- This approach was seen in Denmark, Estonia, France, Hungary, Latvia, Lithuania, Luxemburg, the Netherlands, Sweden, Switzerland and Norway. The main source is the *Common Agricultural Policy (CAP)* records that supports EU agricultural policy, such as subsidies for crops, bovine livestock, organically farmed areas and livestock.



## 4.e Integrating the AC and the PHC

- The relationship between the two censuses could include:
  - i. Coordinating: use of common concepts, definitions and classifications.
  - ii. Sharing field materials; building EAs that suit both censuses; organization of fieldwork.
  - iii. Using the listing of the PHC as a starting point for setting the frame of the AC (household sector);
  - iv. Collecting agriculture-related data in the PHC to screen households engaged in own-account agricultural production (few basic items or an agriculture module).



## 4.e Integrating the AC and the PHC (Cont'd)

- At least 60 countries included agriculture-related items in their PHCs in the 2010 census round.
- Sri Lanka conducted the census of the agricultural sector jointly with the Economic Census 2013/2014.
- Some Pacific island countries included or will include an agriculture module in their PHC to face high fieldwork costs and logistical challenges (e.g. travel to scattered atolls).
- CAPI and CAWI technology facilitates the use of applications that flag households engaged in own-account agricultural activities.



## 5. Conclusions



- Growing user demands for more reliable and relevant data, and cost-efficiency, means better integration of statistical collections within the NSS.
- The AC, as the backbone of the system of agricultural censuses and surveys, should not be overburdened as this affects data quality.
- The AC should focus on key structural items, while other (non-structural) data needed more frequently should come from sample surveys.





## 5. Conclusions



- The presentation has outlined actions to achieve integration.
- These include modalities such as integrated AC with rotating surveys, the use administrative registers and coordinating the agriculture and population censuses.
- These integration efforts must be accompanied by improved legal and institutional frameworks and statistical capacity building.



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**Thank you**