



Technical Review Meeting on the World Programme for the Census of Agriculture (WCA) 2020

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Chapter 4 METHODOLOGICAL CONSIDERATIONS

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Outline

- Introduction
- Traditional approach
- Modular approach
- The integrated census and survey programme
- Main types of frames for the census of agriculture
- Sampling for the census of agriculture
- Methods of enumeration
- Complementary tools



Introduction

- The **WCA 2010** was developed against a background of a rapidly increasing demand for data.
- Many of the **new items** introduced in WCA 2010 were non-structural.
- The concept of the **modular approach** was introduced to facilitate the collection of an increased range of data items without overburdening the census questionnaire used in the traditional approach
- The **WCA 2020 expands** the list of census data items still further. It recognises the traditional approach is still widely practised and the importance of the modular approach for countries without a regular programme of agricultural censuses and surveys.
- In this chapter, the **WCA 2020 discusses** more explicitly these approaches and their suitability to various countries' statistical development



The traditional approach

- **Defined** as a single questionnaire administered at a single visit.
- **By extension**, also includes short/long questionnaire
- **Should include** all ‘essential’ items and may include ‘additional’ items depending on the country’s requirements, other data sources, particularly for non-structural items, and resources.
- **Appropriate for countries** having an integrated census and survey programme or wishing to collect some “additional” items at low administrative levels.



The modular approach

- Clearly distinguishable core module and supplementary module(s)
- **Core module** includes 'frame' items considered as necessary to establish the frame for the supplementary module(s)
- **Core module** can also include census items, particularly 'essential' items, where data is required at the lowest level
- If the frame to be established uses **cut-off limits** the identification of these thresholds needs to be built into the core module
- **Supplementary modules** (usually conducted on a sample basis) use the frame generated by the core module to target specific populations (holdings, households and their sub-sets)



The modular approach (contd)

- **Supplementary modules** are used to collect a more extensive range of data compared to the traditional approach.
- **Modules** can be thematic in nature where the population is a sub-set of holdings, or include multiple themes where the target population is the same for this group of themes.
- **Modules** can be conducted simultaneously or over a period of time. Between the core and the supplementary modules, all 'essential' items should be included.
- **Since the number** and the extent of the supplementary modules are not fixed, the modular approach allows to collect a wide range of additional items depending on the needs of the country and the resources available.



The integrated census and survey programme

The WCA 2020 re-emphasizes the need for the integration of the agricultural census within the overall framework of the system of integrated agricultural censuses and surveys.

- The census is **not** a substitute for a regular survey programme
- The **modular approach can lay** the foundations for an integrated census and survey programme
- A national census and survey programme is a **pre-requisite** for a sustainable agricultural statistics system
- The **Global Strategy** is developing a Agriculture and Rural Integrated Survey Programme (AGRIS) to ensure the core indicators, identified in pillar 1, can be compiled.
- **AGRIS** is being developed in the full knowledge of the WCA 2020 to ensure commonality



Main types of frames for the census of agriculture

Chapter 4 discusses the frames and refers the reader to Volume 2 and relevant publications by the Global Strategy.

- **Two main types** of frames used are list frames and area frames
- **Multiple frame** approach commonly used combining different frames e.g. household and non-household based holdings
- **Registers** can be used but only if complete, up-to-date and meeting the census definition of a holding
- **Frame required** is all agricultural holdings



List Frame

- **The population** of agricultural holdings can be considered in two components – the household sector and the non-household sector
- **The frame** for the household sector often originates from the population and housing census.
- **Specific questions** can be asked in the population and housing census to identify all households engaged in 'own-account' agricultural production activities.
- **This list** can be directly sampled or, through a further visitation, a list of agricultural holdings in the household sector can be compiled based on the holding definition
- In the absence of information on own-account activities, the **list of households** can be used as the initial frame for the household sector.



Sampling for the census of agriculture

- **By definition**, the term ‘census’ implies complete enumeration.
- **Resource constraints** and national conditions sometimes make a complete enumeration impossible.
- **The programme** recognises that some countries conduct the census through sample enumeration
- **At least some items** should be collected on a complete enumeration basis or on a large sample basis.
- **The main advantage** of a sample enumeration is a saving in time, costs and resources. The fieldwork is easier to control and supervise resulting in high quality forms.

Sampling for the census of agriculture (cont'd)

The main weaknesses are:

- **The amount of sub-national** and other finely-classified data able to be produced is limited.
- **Cross-tabulations** that were not planned at the stage of sampling design may not be possible or have high sampling errors.
- **Minor crops/rare types of livestock** may have high sampling errors.
- **Its application** requires well trained personnel in sampling methods and analysis which is not always the situation in many developing countries.
- It may not provide an **adequate or complete frame** for agricultural surveys



Sampling for the census of agriculture (cont'd)

- A **combination** of complete and sample enumeration often presents the optimum methodology to meet the data needs with the budget and resources available.
- The **modular approach** is designed with this methodology in mind. The core module is conducted on a complete enumeration basis whilst supplementary modules are conducted on a sample basis.
- By **dividing the holdings** into strata based on size, different sampling fractions can be applied to each strata to weight the data towards the larger holdings.
- Even the **smallest holdings** should be included in the census.



Methods of enumeration

This new section highlights the **use of new technology** for the collection of data which is resulting in significant efficiencies in data processing and management. It is not limited to the collection of census data but applies equally to all data collection exercises.

- Paper and pen interview (**PAPI**)
- Computer assisted personal interview (**CAPI**)
- Computer assisted telephone interview (**CATI**)
- Self-interview
- Postal enquiry (mail out/mail back)
- Computer assisted self interview (**CASI**)



Other uses of technology

- **Global positioning system (GPS)**
 - 1) Useful for locating and geo-referencing holdings
 - 2) Can be used to measure land areas if the coordinates of the boundaries are available
- **Global information system (GIS)**
 - 1) GIS can also be useful for census management tools as location data can be mapped as part of management of the enumerators. GIS also has benefits for analysis and dissemination of census data.
- **Short Message Service (SMS)** – information sharing and management tool



Points for discussion

- **The distinction between the traditional and the modular approach**
- **Census frames**
- **The use of sampling in the census programmes**
- **Enumeration methods and the application of new technology**