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OUTLINE OF THE WORLD PROGRAMME FOR THE CENSUS OF AGRICULTURE 2020, VOLUME 2: OPERATIONAL GUIDELINES ON IMPLEMENTING CENSUS OF AGRICULTURE

1. Introduction

The World Programme for the Census of Agriculture 2020 has been designed as a two volume publication. Volume 1 focuses on the 'Programme, Definitions and Concepts' while Volume 2 will focus on the 'Operational Aspects for conducting census of agriculture' dealing with the practical details on the steps involved in actually conducting an agricultural census.

The main features of the WCA 2020 Programme detailed in Volume 1 are:

- Close linkages to the Global Strategy to Improve Agricultural and Rural Statistics.
- Emphasis on the integration of the census of agriculture within the overall framework of the system of integrated agricultural censuses and surveys. Four modalities of taking the census are discussed, including the two basic methodological approaches, namely the "classical" approach and the "modular" approach. The *classical census* provides benchmark data and a sampling frame for the agricultural survey programme. The *modular census* complements or, in some cases, acts as a 'quasi' agricultural survey programme. In addition, *integrated census/survey* (with rotating modules spread over the 10 years time separating two censuses) and *combined census* with use of administrative data with census/survey data are introduced.
- The re-introduction of the 'essential item' concept and the identification of 'frame' items included specifically for the construction of sampling frames. Some themes and items were refined, updated or introduced.
- An increased emphasis on the use of information technology in the collection, processing and dissemination of census data

- Re-emphasis on the integration between the population and housing census and the agricultural census, the possibility to collect community-level data and the importance of gender-disaggregated data

2. Background on Volume 2

For past rounds, guidelines on the operational aspects of the agricultural census can be found in ‘Conducting Agricultural Censuses and Surveys’ (SDS No. 6, Rome, 1996) which was a ‘light’ update of the publication ‘Taking Agricultural Censuses’ (Rome, 1978). This publication which served as reference document for field work is now 20 years old. SDS No. 6 provides operational guidance to a census conducted using the ‘classical’ approach.

With WCA2010, both the approach and content of the Census Programme and the modalities of its implementation have substantially changed. The policy, statistical methodology and technology environment, have significantly evolved during the last two decades. Considerable developments have taken place regarding statistical methods and technological tools that are relevant to conducting agricultural censuses and surveys in the 21st Century. The growing demand for more data and the same time the scarcity of resources for census taking create new challenges for ensuring that the census is conducted in the most cost-effective way.

Therefore, providing operational guidance on the WCA 2020 programme will require much more than an updating of existing publications it will require a whole new approach. The new guidelines should consider innovative approaches taking into consideration new features of WCA2020, advances in statistical methodology and the fast growing digital and mobile technology (so called ‘data revolution’). The new guidelines aim at building synergies and complementarity with the wide range of existing results and publications of relevant statistical programmes. In particular, the cost-effective methodologies and tools developed under the comprehensive Research Programme of the Global Strategy to Improve Agricultural and Rural Statistics should provide a solid basis for operational aspects of conducting agricultural census. Many other statistical programmes at FAO and outside FAO have produced tools and methods that can be used for conducting a cost effective census of agriculture.

3. Proposed Content of Volume 2

Volume 2 is conceived as providing operational guidance to the WCA 2020 programme as defined in Volume 1. As such its content should provide new guidelines that will serve as reference document for statisticians in countries in designing and implementing agricultural census operations.

One of the lessons learned from past rounds is the need to provide census managers and officers with practical elements that can help them to build a strong case for the census in their dealing with National decision makers and Resource Partners. Despite the recognized importance of the census in terms of statistics, its high demand on resources is a challenge that makes it difficult for many statistical offices to mobilize the needed funds. Volume 2 should provide guidance on how to build a strong census proposal which demonstrates value for money with good examples of factors that can facilitate the mobilization of resources.

On one side, specific benefits of the census should be indicated with main uses of the results or possible opportunity cost of not having census data for major country policy, programmes and projects as well as investment decisions. Even if monetary value may not be given, concrete country examples should be provided on how the census results have shaped and oriented major policy decisions involving large budgets.

On the other hand, an analysis of the cost structure of the census should be given, identifying the major cost contributors. This can be done by analyzing census projects supported by FAO in various regions of the world. Strategies that will be recommended to significantly reduce the cost should be part of the advocacy for building the case for a cost-effective census.

Therefore, the main drivers for making the case should be reducing cost while preserving or enhancing data quality, responding to growing demand and, possibly, providing more timely data availability.

Volume 2 should provide detailed guidance on modalities to implement the agricultural census with innovative approaches that reduces its cost and improves quality taking into consideration good country experiences, new features of WCA2020, advances in statistical methodology and the fast growing digital and mobile technology.

Detailed guidance will be provided on conducting the census of agriculture following different modalities: (i) classical census as a *single one-off operation*, (ii) *modular census*, (iii) *integrated census/survey* with core and rotating modules spread over the time separating two censuses and (iv) *combined census* with the use of administrative sources.

The practical guidance included in the previous publication (SDS#6) on legal and governance framework as well as work planning, budgeting and expenditure control, staff recruitment and training should remain but will need to be updated. More details will be provided on technical aspects, with examples of good practices in preparing survey instruments and other practical material which is now facilitated with the widespread use of digital documents.

The new guidelines will build on a wide range of existing methods, tools and publications produced during the last two decades through relevant statistical programmes. In particular, the cost-effective methodologies and tools developed under the Global Strategy to Improve Agricultural and Rural Statistics should be made available for efficient census taking. Some of these methods and new tools include: *building and using Master sample frames for agricultural surveys*, *Agricultural Integrated Survey programme (AGRIS)*, *Use of remote sensing for Agricultural Statistics*, *Improving quality and use of administrative data*, *Improving data collection methods*, *CAPI package*, *Providing access to agricultural micro-data*. They should be used for efficiency savings in census taking, improving timeliness and quality and wider access to census data.

4. Proposed outline and structure of Volume 2 (see annex)

Given the proposed content above, Volume 2 can be seen as including on one hand aspects that do not change so quickly (such as legislation, governance, management, planning, budgeting, staffing and some technical aspects) and on the other hand many other aspects related to technology, tools and methods, that may change very frequently and need to be periodically updated. This includes also links to emerging developments or initiatives. Therefore, the structure of the new Volume 2 should be flexible enough to address these two considerations and easy to be updated, taking into account new developments when needed.

In the past it was difficult to include in one publication detailed examples or good practices of survey instruments and other practical material. With the widespread use of digital documents, innovative ways of providing concrete examples will be considered in the new Volume 2.

The emergence of web based knowledge and information systems presents a new medium for the development of knowledge based information systems providing operational guidance, integration with other statistical guidance, resources, tools and examples. A web-based approach linking to relevant methods will provide a practical solution in a flexible manner.

A possible option could be to have Volume 2 with some Parts with detailed text in hard copy on more stable aspects of planning and implementing a census of agriculture and other Parts with short introductions/summaries and hyperlinks to more detailed resources, publications or other material. The web based system could be seen as a menu driven system. Examples and country practices would be included. Linkages to other sources and knowledge systems would be a feature to avoid duplication. The Part 2 of the guidelines could be designed as a web-based knowledge and information system that could be expanded as new material is developed on the example of the International Household Survey Network (IHSN).

Country examples as well as relevant publications could be included in electronic format as CD-ROM or Pen drive attached to the back cover. The solution of the CD ROM or pen drive could also help in addressing the challenge of hyperlink to non-active webpages through time. Instead of updating the whole publication, new releases of CD ROMs and pen drives could be done periodically with most recent web addresses. Advice from IT specialists can be requested for the best way of addressing this challenge.

The proposed annotated outline is shown in the annex.

Proposed annotated outline, Volume 2 of WCA 2020

Foreword

CHAPTER 1: BUILDING THE BUSINESS CASE FOR THE CENSUS OF AGRICULTURE

This introductory Chapter will aim at assisting those responsible of census of agriculture (CA) in making a good case with decision makers and resource partners on why they should invest in the census, what will be done to ensure value for money is achieved and what are the key factors for successful resource mobilisation. Innovations to reduce cost, respond to growing demand and providing more timely data should be emphasised.

The Chapter should also provide an overview of the guidelines as well the main steps needed to implement the census. Main sections should include:

- Importance of the CA and its role and place in an integrated agricultural statistics system and linkage of this volume with volume 1,
- Effective advocacy and elements for building a strong business case for CA and strategies for mobilizing the resources for funding the census, reducing cost and improving timeliness and quality (including multiple data collection modes),
 - Benefits of the CA: impact on major policies, programmes, investments and opportunity cost of lack of census data with specific country examples
 - Cost analysis of CA and strategies for reducing cost with examples,
- Overview of the Guidelines and summary of the main steps involved in undertaking a census

CHAPTER 2: MODALITIES TO CENCUS TAKING – *(mainly paper text with hyperlinks to good country examples)*

Expanding on the brief description in Volume 1, this Chapter should provide a detailed description of the four modalities for conducting an agricultural census giving details on the modalities of implementation of each approach, the requirements and an analysis of the advantages and limitations as well as good country examples.

- (i) Classical census: one-off operation,

In Volume 1, the classical approach is described as ‘a census conducted as a single one-off operation in which all the census information is recorded. By extension, this classical approach also includes the short-long questionnaire concept, even though the long questionnaire may be completed at a second visit’.

Volume 2 will provide more detail on the content and ways of implementing a classical census.

- (ii) Modular census with core module by complete enumeration and supplementary modules by sample.

This modality was introduced in the 2010 World Programme for Census of Agriculture. Volume 1 of WCA2020 specifies that this modality of taking the census ‘has a clearly distinguishable core

module and supplementary module(s), using information collected in the core module as the frame for the supplementary module(s)'.

Volume 2 will elaborate more on practical guidance for implementing this modality of census as the analysis of the results of WCA2010 showed that only a limited number of countries effectively used this census.

(iii) Integrated census/survey,

This is a new modality of conducting the CA that aims at re-enforcing the integration of the census of agriculture in a multi-year census/survey programme. It was introduced in Volume 1 as the Agricultural Integrated Survey (AGRIS). AGRIS is a 10 years modular agricultural census/survey program which is to be articulated with the WCA 2020 and conducted on an annual basis between two censuses. It is designed as a cost-effective way of producing a wide range of data on various dimensions of agricultural holdings combining a core module and 4 rotating modules (additional modules can be added): 'economy', 'labour force', 'machinery and equipment', and 'production methods and environment'.

Modalities of implementing the integrated Census/AGRIS will be further developed in Volume 2, drawing on the technical note on AGRIS.

(iv) Combined census with use of administrative sources with one of the above.

This is also a new modality that is recognized in WCA 2020. In Volume 1, it is recognized that 'registers and other administrative sources can be used as a source of census data, depending on their content and quality. In principle, when greater amounts of information can be obtained from administrative sources, the production of census-type statistics will be faster, cheaper and more complete. The most complete use of registers will be when all the essential census items can be based on administrative sources.'

This new modality of census taking will also be further elaborated in Volume 2 with variations depending on country situation and quality of available relevant administrative data.

CHAPTER 3: CENCUS FRAMEWORK *(mainly paper text with hyperlinks to good country examples)*

In this chapter, legal and institutional framework need for conducting the census will be discussed with links to good country examples. Guidance will be provided on the following points:

- Legal framework
- Institutional framework (census committees, census bureaus, etc.)
- Planning and budgeting
- Publicity/Communication Strategy
- Tabulation plan
- Quality assurance framework

CHAPTER 4: TOOLKIT FOR CENSUS TAKING *(mainly short texts with hyperlinks to detailed/dedicated sites or publications with examples)*

This Chapter will provide census managers and officers with practical tools and methods that best suits their situation and the census approach that they want to follow. It should strongly build on already available and proven tools and methods and make linkage to relevant specialized publications or websites that gives detailed modalities of use or implementation. Increased emphasis will be put on the use of information technology in data collection, processing, analysis and dissemination. Therefore, the Chapter will be made of short texts, with hyperlinks to relevant resources. It will be articulated around the various phases of census taking, from preparation to field work, data processing, analysis and dissemination. An important point will be the evaluation of the quality of census data through post-enumeration surveys or computation of sampling errors in case of use of sampling. Data access and dissemination will also be an important point. Links to good country examples will be made available as resource base for census managers and officers. The following points will be covered:

4.1 Census preparation

- Mapping/Frame building and using (Remote sensing, Population census, Administrative data sources)
- Sample design (for sample-based census and sample modules)
- Questionnaires and manuals
- Staffing
- Organization of field work (pre-tests, pilot censuses, listing operation, enumeration)
- Training

4.2 Data collection

- Census data collection: Face to Face (PAPI, CAPI), Remote (on-line, CATI, Mailing), use of GPS, etc.
- Post enumeration survey

4.3 Census data processing, quality evaluation and archiving

- Data processing
- Quality evaluation (sampling and non-sampling errors and technical report)
- Data archiving
- Tabulation

4.4 Census data analysis and dissemination

- Data analysis and preparation of census reports
- Dissemination/access to census micro data
- Reconciliation of current statistics with census results

CHAPTER 5: MAIN STEPS AND TOOLKIT RECOMMENDED FOR EACH CENSUS MODALITY (*mainly text*)

This last Chapter will reconcile chapters 1 (census modalities) and 3 (census preparation, data collection, processing and dissemination) and provide a summary of practical steps and recommend tools for the effective implementation of each census modality. Cross-references will be provided to relevant sections of earlier chapters.