Regional Workshop on the Operational Guidelines of the WCA 2020
Dar es Salaam, Tanzania
23-27 March 2020

Chapter 16: Questionnaires & Instruction Manuals
Technical Session 6.1

Paul NGomaKimbatsa
Regional Statistician
FAORAF
CONTENT

QUESTIONNAIRES

• Development
• Characteristics
• Working group and users-producers consultations
• Design & data processing requirements
• Pre-testing
• Advantages and disadvantages

INSTRUCTION MANUALS

• Enumerator
• Supervisor
• Provincial Coordinator

COUNTRY EXAMPLES
Development of the questionnaire

Considerations:

• The census questionnaire is the most basic document in the census programme.
• Any deficiencies in the questionnaire design will lead to incomplete and inaccurate data being collected.
• Considerable thought should be given to formulating the questionnaire and input sought from available experts on this subject matter.
• The validity of various questions in the questionnaire can be evaluated by conducting a pre-tabulation before designing the questionnaire.
Development of the questionnaire (cont’d)

Design and characteristics depends on:

- **census modality** (classical approach, modular approach, AGRIS modality or use of registers as a source of census data)
- **type of holding** (holdings in the HH sector and in the non-HH sector)
- **method of data collection** (paper-based questionnaires or e-questionnaires)

Format depend on:

- **method of inquiry** (face-to-face or self interview-paper/electronic)
- **unit of observation** (holding or community level)

*Nevertheless there are general characteristics of census questionnaires that apply to all methods of enumeration*
General characteristics

Size of the questionnaire is important

- temptation of inclusion of great number of questions should be resisted.
- the interview length should not exceed 45 minutes
  
  if the questionnaire is lengthy, optimize the design:
  - splitting questionnaire into several parts (or distribute the questions in two or more questionnaires).
  - applying different questionnaires to different provinces and/or holding types

Tabulation plan

- determined before designing the questionnaires in order to ensure the data collected meet the requirements for the tabulation programme.

Concepts and definitions should be

- easily understood by the holder and the census field staff.
- harmonized with those used in the other agricultural statistics programmes and the recommendations of FAO and other international organizations.
General characteristics (cont’d)

**Question sequence:** should be set out in a logical order so that it is easy for the holder to supply the requested information. All the questions on one subject should be grouped together (e.g. sections).

**Wording:** The questions should be formulated in a clear simple language, using, wherever possible, the vocabulary familiar to the holder.

**Languages:**

When two or more languages are used in the country and paper-based questionnaires will be applied, different alternatives can be used:

i. a single, multilingual questionnaire;

ii. one version of the questionnaire for each major language;

iii. translations of the questionnaire in different languages available in the enumerators’ manual and / or on the Internet site for the agricultural census.

When e-questionnaires are used, the availability of census questionnaires in different languages can be easily solved.
Characteristics of paper-based questionnaire

Face-to-face interviews based on paper based questionnaires (PAPI) or regular mail - special characteristics need to be considered:

**Shape:** it should allow easy handling in the field;

**Paper quality:** Thin paper should be avoided because during the field work the questionnaire is often subjected to unfavourable climatic conditions and to constant handling.

**Color of the paper:**
- **Light colors** which do not strain the eyes and on which it is easy to read should be chosen.
- **Different types of questionnaires** (modular approach or census taken along with the PHC or economic census) it is convenient to use **colors** to avoid mistakes when handling them.

**The size of the print** should be easily read even when light is not adequate.

**The space for replies** should be large enough so that there is room for responses to be entered and the lines should not be printed too close together.

**Question numbering:** Each question should be numbered so as to be able to refer to it easily in the instructions and elsewhere.

**Pre-coding:** paper based questionnaires should be as much pre-coded as possible to diminish the editing and coding process.
Characteristics of e-questionnaires

Computer assisted (CAPI) or on-line, electronic questionnaires - special characteristics need to be considered:

**Drop-down** menu for answering.

**Pre-programmed automatic jumps.**

**Consistency checking** during the interview.

*Warning:* temptation of putting many consistencies checking during the filling of the form should be avoided because it can greatly slow the interview. Blocking checks should be avoided but warning errors need to be allowed.

**Handling several linked questionnaires** in the same interview.

**Direct data transmission** to field and central offices.

**Sufficient time** must be given to test and implement bug-free electronic questionnaires and related software systems (when using CATI or CASI).

**Questionnaires clearly seen** under any light condition for the handheld device (under the sun light, different weather situations).

**Allow quick links** to maps, satellite imagery and GPS to help enumerators in the field work when programming an electronic census questionnaire.
Characteristics of community survey questionnaires

Community survey questionnaires - when community level data are taken along with the census of agriculture, specific questionnaires need to be designed:

- **Shorter** than a classical census questionnaire but **longer** than the one for the core module in the modular approach because usually will comprise questions in order to guarantee adequate links with the holdings in the community area.

- **Part of the information can come from administrative registers** and the community survey questionnaire should contemplate it.

- **Typical community survey questionnaire sections:**
  - Geography
  - Socio-economic conditions
  - Community infrastructure
    - Availability of agricultural services
    - Availability of other services
  - Development programmes
Working group and users-producers consultations

**Objectives:** to put together the producers of information and main users of it in order to discuss all census stages and to guarantee the ownership of the census project to main users. The group will discuss census content and methodology. A sub-group of users can be integrated into a census questionnaire working group.

**The working group**

- must work with data users to determine specific questions in the census questionnaire
- should include staff who is involved in agricultural planning, in collection of statistics or as data users within the agricultural sector.
- should not be too large.
- the members of the group should hold responsible posts in their respective departments.
Working group and users-producers consultations (cont’d)

Consider the last agricultural census taken in the country (if available), similar census questionnaires and other national reports when defining the contents of the census questionnaire.

Examine each of the items carefully.

The content of the questionnaire should be compared with international recommendations and each of the items examined, studying the difficulties encountered and the use to be made of the information collected.

New subjects can appear and items which were not included in the census conducted earlier may now be important. The reverse may also occur: subjects considered useful in the previous census are no longer of any value.

It is advisable to study the questionnaires used by other countries, especially those of the same region.
Questionnaire design and data processing requirements

Three main methods for data entry:
(the way the data are going to be entered is very important when preparing the census questionnaire)

- Keypunching or “manual data entry”
- Scanning
- Automatic data capture from an electronic questionnaire
Questionnaire design and data processing requirements (cont’d)

Some general rules apply to all types of questionnaires:

- Analyze whether the information recorded on the questionnaire can be processed easily.
- In case of conflict between data collection and data processing requirements, priority is given, in principle, to data collection requirements.
- An identification number should uniquely identify each questionnaire and should always be numerical.
- An identification code is also needed. This is a nested code identifying unambiguously the agricultural holding. For example: two digits for province or state; two digits for district; two digits for village or enumeration area (EA) and a three digit correlative number for the agricultural holding within village or EA.
Questionnaire design and data processing requirements (cont’d)

From the point of view of data processing, **five types of questions** can be distinguished:

i. **Numerical value** questions (such as total area in has)

ii. **Multiple-choice** questions, only one of the categories should be marked (e.g. legal status of holder: civil person, juridical person, etc.)

iii. **Multiple-answers** questions where more than one answer is possible (like type of fertilizers used: mineral, manure, bio-fertilizers, etc.)

iv. **Introductory** questions, usually at the beginning of a section asking if any information of the section is available or if not skip the whole section (e.g. Do you hold any livestock on the holding? If “No” go to the next section)

v. **Open (or semi-open) ended** questions (like “Name of holder”)

**Processing** considerations:

- types (i) and (ii) create no problems in processing
- types (iv) are very useful, particularly at data entry stage
- types (iii) and (v) create problems and it is advisable to minimize them
- CAPI methods make type (v) questions more easily usable
Questionnaire design and data processing requirements (cont’d)

Preparing questionnaires for scanning
additional general considerations are needed:

- **Quality** of the paper
- **Color** of different parts of the questionnaire
- **Precision** in the printing and cutting of all the questionnaires
- **Handwriting** of text in the questionnaires should be as uniform as possible to common “model” handwriting
Questionnaire design and data processing requirements (cont’d)

Designing electronic questionnaires (EQ)

Electronic questionnaires are used in the computer-assisted self-interviewing (CASI/CAWI) and computer-assisted personal interview methods (CAPI or CATI).

- The EQ should be user-friendly and include navigational help information, drop-down menus, online edits and a help or “FAQ” section.
- Accessibility standards and regulations for visually impaired people may be considered in the design of a web electronic questionnaire.
- The access to the EQ should be done after a secure login process protected by a strong encryption.

Processing electronic questionnaires (EQ)

- When using CAPI or CASI/CAWI, there is not a separate process of data-entry. Data are captured at the same time that they are recorded in the electronic device.
- Automatic transmission of completed questionnaires to a centralized database for quality control and analysis is an asset for e-questionnaires.
Pre-testing of questionnaires

It is essential that functionality of questionnaires be evaluated in the field by means of a series of pre-test surveys and pilot censuses.

- Where the census is conducted in more than one language it is important to test the questionnaires in each language version.
- EQs should also be tested.
- After taking into account the field testing, the questionnaires should be very carefully revised.
- All questionnaire tests, including the EQs, should be completed well in advance of the actual census to allow time to make the necessary changes to the questionnaires and instruction manuals and, if necessary, to pretest again.
- In the case of EQs, a group of experts could be assigned to test them.
# Advantages of different types of questionnaires

<table>
<thead>
<tr>
<th>Paper questionnaires</th>
<th>EQ in handheld devices</th>
<th>Web-based EQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Easy to understand</td>
<td>1. Easy to manage in the field</td>
<td>1. Low cost</td>
</tr>
<tr>
<td>2. Respondents can easily review their answers</td>
<td>2. Some editing checks and jumps are automatic</td>
<td>2. Easy to implement</td>
</tr>
<tr>
<td></td>
<td>3. They allow drop-down menus.</td>
<td>3. Some editing checks and jumps are automatic</td>
</tr>
<tr>
<td></td>
<td>4. They allow smoother and faster interviews</td>
<td>4. They allow drop-down menus</td>
</tr>
<tr>
<td></td>
<td>5. They allow the use of multiple questionnaires according to the answers received</td>
<td>5. Fast processing</td>
</tr>
<tr>
<td></td>
<td>6. They allow quick links to maps, satellite imagery and GPS to help enumerators in the field work</td>
<td>6. They may be in different languages</td>
</tr>
<tr>
<td></td>
<td>7. In the modular approach, it allows to sample holdings to apply supplementary modules during the taking of the core module</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Easily switch between different languages</td>
<td></td>
</tr>
</tbody>
</table>
Disadvantages of different types of questionnaires

<table>
<thead>
<tr>
<th>Paper questionnaires</th>
<th>EQ in handheld devices</th>
<th>Web-based EQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Printing, delivering, handling of thousand or million of sheets of paper make difficult the field work</td>
<td>1. Require field testing in the most difficult conditions and a good training programme</td>
<td>1. Works well with educated respondents</td>
</tr>
<tr>
<td>2. Require special process of manual editing and data entry (manual / scanning)</td>
<td>2. Cost of devices. But the cost can be shared with other surveys</td>
<td>2. Respondents need to be in some way trained to respond rightly</td>
</tr>
<tr>
<td>3. Can deteriorate easily</td>
<td>3. Special skills are required for programming the devices</td>
<td>3. They require security to avoid hacking and protect confidentiality</td>
</tr>
<tr>
<td>4. In case of the modular approach it is difficult to draw sample holdings</td>
<td>4. The country needs to have good internet or satellite connectivity</td>
<td>4. The country needs to have good internet connectivity</td>
</tr>
</tbody>
</table>
INSTRUCTION MANUALS

The instruction manuals serve two primary purposes:

1. Serve as an instrument of study during training courses;
2. Provide basic material for reference during the census enumeration.

- Regardless of the data capture methods used in the field, instruction manuals are paramount to ensure quality of the field work.

- Printed manuals, online manuals or manuals included in CAPI (or any combination of them) are needed.

- Census manuals should be adapted to each census modality (classical, modular, etc).
Instruction manuals (cont’d)

Manuals for:

**Classical approach** and **complete enumeration**: manuals must emphasize the need of complete coverage of the assigned area.

**Modular approach** when supplementary modules are implemented at the same time as the core module: manuals for the core module are similar to the ones used in the classical approach. If the enumerator must select the sample, manuals should clearly explain the procedure for selecting the samples for supplementary modules. In case of CAPI, the app could select the sample automatically.

**Modular approach** when supplementary modules are implemented after finalizing the core module: One manual to undertake the core module and other(s) manuals for the supplementary module(s).

**Registry based census.** If all the essential census items are based on administrative sources, manuals should refer on how to prevent duplications and omission and should emphasize in preserving confidentiality. If there is a combination of data obtained from registers and by means of data collection in the field, two types of manuals are needed.

**Integrated census and survey approach.** Specific manuals for the decennial collection of data and for annual surveys are needed.
Instruction manuals (cont’d)

**When** manuals should be prepared? Well in advance of training

**Who** should prepare the manuals? Staff who are conversant with conducting an agricultural census or other statistical operations, not only from a theoretical but also from a practical point of view.

**How** instruction manuals should be presented? Clearly and simply so that they are easily understood. The manuals should not be too large (about 45 to 60 pages) and for paper based manuals small enough to fit in a handbag.

**Which are the main issues to tackle** in the manuals?

- Characteristics of the census operation
- Objectives
- Organization
- Legal aspects and confidentiality
- Obligations and rights
- Definitions and concepts
- Map-making and reading
- Use of GPS
- Use of data-capture devices
The basic contents may be as follows:

- Why the census is being taken and what is its importance?
- Objectives of the census
- Uses of census information
- General information about the census
- Responsibilities and rights of census staff with emphasis on enumerators
- The interviewer and interviewing
- Desirable attributes of the interviewer
- Preparation for the interview
- Tips on interviewing
- Resolving common problems in interviewing
Manual for the Enumerator (cont’d)

The basic contents may be as follows (cont’d):

- The questionnaire: item by item exact explanation for each question and how to make proper entries
- Other census forms
- Mapping and listing forms
- Conversion tables and related tables
- How take objective measurements (when envisaged)
- Use of data-capture device (when CAPI is used):
  - Entering data
  - Correcting data entry
  - Saving census questionnaires
  - Transferring the questionnaires
  - Troubleshooting of the device
- Annexes 1 Administrative instructions
Manual for the Supervisor

The supervisor’s manual may include the following sections:

- General responsibilities of the supervisor
- Role of supervisors in selection, recruitment and training of enumerators
- Preparation of mapping, listing and other census field materials.
- Field supervision:
  - How to check census questionnaires
  - In what cases questionnaires must be returned to enumerators
  - How and when to dismiss and substitute negligent enumerators
  - How and when to re-visit censed holdings
  - Procedures for a first editing of census questionnaires
  - Filling the field work progress report

If CAPI is used, a detailed explanation on how proceed with electronic questionnaires received, their checking and edition and the way the supervisors return their feedback to enumerators is paramount

Preparation of summary of most important data (when envisaged).
The provincial coordinators’ manual may include the following sections in addition to that included in the supervisors’ manual:

- General responsibilities of the coordinators
- Selection of applicants for supervisors’ and enumerators’ posts
- Training of supervisors
- Receipt and editing of questionnaires and other forms completed in the field:
  - Assess the quality of supervisors’ work and ways to correct issues about field supervision
- Dispatch of progress reports on the census
- Summary report on preliminary data.
- Instructions on administrative aspects
- Dispatch to the central office of all the documentation dealt with.
- Final Report.
Lesotho agricultural census 2009/2010 covered agricultural production activities (crop and livestock) but only holdings in the household sector in rural and urban areas were concerned.

The census was conducted as a sample census. A community survey was conducted along with the census. A stratified two stage sample was use to select the census sampled holdings. EA was selected as PSU and holding listed in each sampled PSU. A sample of holding selected in each PSU.

Four questionnaires were prepared to collect data:

1. Rural household listing questionnaire
2. Urban household listing questionnaire
3. Questionnaire for holdings in rural area (with 11 forms)
4. Questionnaire for holdings in urban area (with 6 forms)
The 11 forms of the rural area holdings are:

**Form AC-1**: Listed all agricultural holders in each selected PSU. The main purpose for listing households was to enable second stage of sampling.

**Form AC-2(i&ii)**: Information was on demographic characteristics of the sampled holders.

**FormAC-3**: It was used for recording actual field measurements, the crops planted on each field and field sketch.

**FormAC-4**: Used to prepare a frame of fields planted to each crops.

**FormAC-5(i, ii&iii)**: The form was used for collecting data on inputs and operation cost. **FormAC-6**: Recorded information on complete crop failure or pre-harvest loss.

**FormAC-7**: Recorded plot cutting for yield estimation.

**FormAC-8**: It was used to estimate the entire field production.

**Form AC-9**: Availability and Utilization of cereals in the household.

**FormAC-10**: It was used for livestock ownership.

**FormAC-11**: Estimated farm assets
The 6 forms of the urban area holdings were:

Form UAC-1: Household listing
Form UAC-2: Household members
Form UAC-3: Household Possession
Form UAC-4: Kitchen Garden Measurements
Form UAC-5: Operations and inputs
Form UAC-6: Production
Country examples (cont’d)

LESOTHO AGRICULTURAL CENSUS 2009/2010
Questionnaires and Instruction Manuals

An enumerator’s manual was prepared as supporting and reference document for the enumerators for field data collection. It covered aspects of:

• scope and coverage;
• methodology;
• procedures;
• concepts and definitions;
• content of 24 questionnaires were explained and discussed;
• Other aspects like work of the enumerators in the field, general conduct of the census, filling of questionnaires, practical measurement of fields, crop cutting experiments and weighing of fields.

THANK YOU