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Chapters 17/18 Staffing & Training
Technical Session 6.2

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FAO Statistics Division (ESS)
CONTENT

STAFFING

• Categories of census staff
• An example of high level structure of census staff
• Office staff
• Field staff

TRAINING

• Introduction
• Organization and logistics of the training programme
• Training of trainers (ToT)
• Training of supervisors
• Training of enumerators
• Training in writing inspection reports
• Training of office staff
• Training in the use of advanced technologies
• Use of training aids
Categories of census staff

Office staff: personnel needed for overall management of the census, planning and executing the census operations, including training of field personnel, data processing and analysis, and dissemination of census results

- National census coordinator
- Provincial census coordinators
- Technical staff:
  - 1st category of technical staff - planning the technical aspects for the data collection.
  - 2nd category of technical staff - Data processing staff.

Field staff: personnel for field operations, including data collection and supervision activities.

- Provincial supervisors
- Local supervisors
- Field enumerators
An example of high level structure of census staff

- Central census office staff
  - Support services
  - Census methodology
  - Field operations
  - Processing
  - Dissemination and analysis

- Regional and field staff
  - Provincial coordinators
  - District coordinators
  - Supervisors
  - Enumerators

Head of Central Census Office (Census Coordinator)
Office staff

National Census Coordinator (NCC) - leader of the central census office who has the overall responsibility of the census.

Responsibilities of the NCC

- Planning, management, organization and coordination
- Overall implementation (WP and modalities)
- Guidance on strategic issues
- Chairing the stakeholders consultation
- Ensuring that the census programme aligns with the requirements of stakeholder
- Communicating expectations and critical decisions to the executive management of the census agency

- Efficient allocation and use of resources
- Report on the status of implementation to the executive management to the steering committee
- Organise regular meetings with office staff and with provincial census coordinators
- Addressing issues that have major implications for the census programme.
Office Staff (cont’d)

Provincial census coordinator (in some large countries) supported by trained and experienced statistical personnel, could be appointed in each province.

He/she should:

• have qualifications and experience suitable for the level of responsibility in the organization of the census and be familiar with the province specificities.

• have responsibilities and duties as the national census coordinator at provincial level.

• report to the national census coordinator regularly.
Office Staff (cont’d)

The **technical staff** consist of statisticians, IT/data processing staff and in some countries, subject matter staff.

**First category of technical staff:** persons in charge of planning the technical aspects for the data collection.

**Profile:** should be specialized in the following fields:
- Planning and administration
- Agricultural census organization and monitoring
- Agricultural census methodology and sampling techniques
- Data tabulation, analysis and dissemination
- Quality control and evaluation
- Training of field staff

**Duties and responsibilities:**
- Designing the census methodology and instruments
- Analysis and dissemination of census data
- Recruiting and training field staff
- Monitoring field operations
- Designing the tabulation and analysis plan
- Analyzing the data and drafting the final report
Office Staff (cont’d)

- **Use of CAPI** (or CATI, CASI/CAWI) for data collection, technical staff qualified in programming, GIS, computer science, etc. is also needed. *(should include specialists in the use of handheld devices and associated software packages).*

- **Use of sampling**, a sampling specialist should be included in the technical staff to advice on all sampling related activities.

- **Use of registers** as sources of census data a group of specialists with broader skills and knowledge of use of administrative data in statistics is needed. In this case a specialist of record linkage techniques should also be included in the central census office.
Office Staff (cont’d)

Second category of technical staff: Data processing staff. The data processing could be done in the head office or in decentralised offices.

Profile:
Where possible, these personnel should be recruited among individuals with degrees in computer science (analysts, programmers) and experience in census and survey data processing.

Duties and responsibilities
• The organization of data processing activities
• Management of data entry personnel (if any)
• Elaborating data entry and editing programs and tabulation programs
Field staff

The **field staff** plays a critical role in the quality of the data collected in the census. The number of field staff required for the agricultural census is usually large.

1. **Roles and responsibilities** at each level will vary and depend on the basis of enumeration.

2. **Time available for communication** between people at different levels of the hierarchy must be taken into account when defining the structure of field staff.

3. **Staffing ratio between different levels** is crucial for planning and budgeting. Three ratios need to be considered:

   1. *Number of deputies provincial supervisors per provincial supervisor*;
   2. *Number of supervisors per deputy provincial supervisor*;
   3. *Number of enumerators per supervisor*. 
Field staff (cont’d)

The number of enumerators (E) to be recruited should be one of the first activities in planning an agricultural census.

Parameters to establishing the number of enumerators needed (E):

• **Time per interview** (assessed during the pilot census) defines the number of interviews per day (Q),

• **Number of holdings** to be censed (N) (from the census frame)

• **Time defined** to complete the whole operation (D)

\[ E = \frac{N}{D \times Q} \]
Field staff (cont’d)

Administrative/organizational aspects:

- **How** salaries and subsistence allowances are paid, description of the administrative forms which have to be completed, etc.;
- **Work schedule** should be specified;
- **Period of work** for which each type of staff is hired should be carefully planned and fixed in advance;
- Instructions for the **selection of enumerators** should be detailed (basic qualifications and experience required)
## Enumerator’s requirements

<table>
<thead>
<tr>
<th><strong>Educational Requirements</strong></th>
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<tbody>
<tr>
<td><strong>Education</strong></td>
<td>Ideally, have high school education and some knowledge of agriculture</td>
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<tr>
<td><strong>IT knowledge</strong></td>
<td>Knowledge of computer hardware and software, including applications, especially if data entry is done through CAPI</td>
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<td><strong>Clerical</strong></td>
<td>Knowledge of administrative and clerical procedures.</td>
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<tr>
<td><strong>Language skills</strong></td>
<td>Knowledge of the structure and content of the country/local language</td>
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<tr>
<td><strong>Geography</strong></td>
<td>Knowledge of principles and methods for describing the features of land, sea, and air masses, locations, and distribution of plants, animals, and people</td>
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<tr>
<td><strong>Cartography</strong></td>
<td>Able to read and understand maps and cartography</td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td>Knowledge and use of arithmetic</td>
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<tr>
<th><strong>Abilities and Skills</strong></th>
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<tr>
<td><strong>Customer Service</strong></td>
<td>Customer needs assessment, meeting quality standards and evaluation of satisfaction</td>
</tr>
<tr>
<td><strong>Time Management</strong></td>
<td>Effective management of own and others’ time</td>
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<tr>
<td><strong>Accuracy</strong></td>
<td>Record information on questionnaires accurately</td>
</tr>
<tr>
<td><strong>Written and Reading Comprehension</strong></td>
<td>Ability to read and understand written information</td>
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<tr>
<td><strong>Communication</strong></td>
<td>Ability to communicate effectively both verbally and in writing</td>
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<tr>
<th><strong>Personal Characteristic</strong></th>
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<tr>
<td><strong>Active Listener</strong></td>
<td>Give full attention to what other people are saying, understand the points being made, ask appropriate questions, and not interrupt at inappropriate times</td>
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<td><strong>Social sensitivity</strong></td>
<td>Be familiar and have sympathy with local and social conditions</td>
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<tr>
<td><strong>Reliable</strong></td>
<td>Persons who, by their attitude and behavior, obtain other’s respect and confidence</td>
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## Supervisor’s requirements

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<tr>
<th><strong>Educational Requirements</strong></th>
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<tr>
<td><strong>Education</strong> – Ideally, have bachelor education and some knowledge of agriculture</td>
<td></td>
</tr>
<tr>
<td><strong>Administration and Management</strong> – Knowledge of principles involved in strategic planning, resource allocation, leadership, and management of people and resources</td>
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<tr>
<td><strong>Clerical</strong> – Knowledge of administrative and clerical procedures</td>
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<tr>
<td><strong>Language skills</strong> – Knowledge of the structure and content of the country/local language</td>
<td></td>
</tr>
<tr>
<td><strong>Geography</strong> – Knowledge of principles and methods for describing the features of land, sea, where appropriate, and air masses, locations, and distribution of plants, animals, and people</td>
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<tr>
<td><strong>Education and Training</strong> – Familiarity of methods for training design, teaching and instruction for individuals and groups</td>
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<tr>
<td><strong>Mathematics</strong> – Knowledge and use of arithmetic</td>
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<tr>
<td><strong>Personnel and Human Resources</strong> – Understanding of procedures for personnel recruitment, selection, compensation, labour relations and negotiation.</td>
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<td><strong>Experience</strong> – Experience in supervisory and conducting censuses and/or surveys</td>
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<td><strong>Expertise</strong> – In-depth knowledge of censuses and/or surveys procedures and manuals</td>
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<tr>
<td><strong>Methods</strong> – Knowledge of census/survey methods and terminology</td>
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<tr>
<td><strong>Cartography</strong> – Able to read and understand maps and cartography</td>
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<tr>
<td><strong>ABILITIES AND SKILLS</strong></td>
<td><strong>PERSONAL CHARACTERISTICS</strong></td>
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<tr>
<td><strong>Management of Personnel</strong> – Motivating, developing, and directing people.</td>
<td><strong>Monitoring</strong> – Monitoring/Assessing performance of him/herself, other individuals, or organizations to make improvements</td>
</tr>
<tr>
<td><strong>Organizing, Planning, and Prioritizing Work</strong> – Developing specific goals and plans to prioritize, organize, and accomplish the work.</td>
<td><strong>Critical Thinking and Problem Solving</strong> – Using logic and reasoning to identify solutions, conclusions or approaches to problems</td>
</tr>
<tr>
<td><strong>Social Skills</strong> – Customer and personal service, leadership and team interaction skills</td>
<td><strong>Coordination</strong> – Capacity to organize individuals or groups for them to work together efficiently.</td>
</tr>
<tr>
<td><strong>Quality Control Analysis</strong> – Conducting tests and inspections of products or processes to evaluate their quality or performance</td>
<td><strong>Instructing</strong> – Teaching others how to do or perform certain tasks</td>
</tr>
<tr>
<td><strong>Communication</strong> – Ability to communicate effectively both verbally and in writing</td>
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Field staff (cont’d)

Main responsibilities of enumerators:

• Attend the training;
• Receive materials and equipment from supervisors;
• Develop an enumeration schedule/itinerary;
• Become familiar with the EA and households/holdings to enumerate;
• Explain to holders or community groups the purpose and characteristics of the census;
• Represent the census authority to respondents;
• Fill questionnaires according to instructions;
• Perform clerical work at home and in the field;
• Update and correct the assigned EA’s maps and addresses;
• Ensure full coverage of enumeration units assigned;
• Report to the supervisor
• Complete visitation records;
• Hand over all questionnaires or return the handheld device
• Write a brief report
Field staff (cont’d)

Main responsibilities of supervisors:

• Attend the training;
• Provide the enumerators a method for quick communication;
• Visit enumerators in the field;
• Prioritize, coordinate and monitor the work flow;
• Report to management on issues affecting data quality;
• Conduct an intermediate review of questionnaires, visitation records and maps for completeness and accuracy;
• Visit and interview agricultural holdings who refused to answer;
• Provide assistance with Enumeration Districts that enumerators were unable to complete due to difficult and unusual circumstances;
• Reassign EAs if needed;
• Periodically report on the progress of interviewing in the Supervisory Area and turn in the completed work to the corresponding Census Supervisors Coordinator (Provincial Supervisor);
• Conduct a formal check (end of the enumeration process);
• Conduct visits to a sample of randomly selected holdings
• Write a brief final report
TRAINING
Introduction

The census of agriculture involves hundreds or thousands of personnel with different roles, levels and capabilities. All staff needs to be trained in a short period of time.

Challenges:

◦ diversity of training courses addressed to staff with different profiles;
◦ establishment of training venues all around the country;
◦ uniform delivery of training in all venues;
◦ selection of appropriate training techniques and/or training aids;
◦ assessment of trainees, etc.
Organization and logistics of the training programme

Training programme should:

- cover each phase of the work according to the census modality (e.g. classical, modular);
- provide efficient and consistent means of effectively preparing large numbers of employees;
- be strictly planned by staff having the necessary qualifications and experience in capacity building for large and heterogeneous groups of personnel;
- organization and delivery of training courses should be included in the planning and budgeting stages;
- content and timing of training programmes should be appropriate for the level of personnel expected to be trained;
- the ways to deliver the training at different levels must be carefully planned.
Organization and logistics of the training programme

The training procedures can be top down in a cascading manner:

- High level census organizers
- Main technical staff at the central census office
- Training of trainers for different tasks
- Training of provincial coordinators and office staff
- Training of field supervisors
- Training of field enumerators

- Census enumeration and supervision;
- Office staff (programmers, coders, data entry operators or operators of data recording equipment, cartographers);
- In advanced technologies;
Training of trainers (ToT)

The number of census staff depends on the size and other characteristics of the country. Trainers could be trained by the central office staff or specialized instructors could be contracted specifically to do the training. If the number of trainers is small, they could be trained directly in the central office. If the number is large, then an intermediate layer of trainers trained in the central office could train the personnel in different locations.

Senior census staff in countries:

- **with long census tradition** receives on-the-job training.
- **with little or no tradition** in census taking, international training should be organized, such as study tours in neighbouring countries and attending FAO census workshops.

Technical staff from the CCO* will train the supervisors both as trainers for enumerators and specifically for their supervisory tasks.

Persons trained at national training centres are likely to become very important in the census taking. Their training should not only cover the enumeration work, but also cover the broader aspects of the agricultural census. These trained personnel can train enumerators and supervisors in census work and, subsequently, supervise their work.

*CCO-Central Census Office
Training of supervisors

- Should have an intensive training programme.
- Would be trained first by the technical officers of the executive agency responsible for the agricultural census.
- Supervisors will, in turn, train the enumerators or at least participate in the training.
- The training of supervisors should also include items concerning the training of enumerators, and they themselves should be trained to become good enumerators.
- Supervisors should also be trained in the procedures for selection of enumerators (if they are given this task), publicity, preparation of field work reports, etc.
- They should be given actual practice in the methods of training enumerators and in checking enumerators’ field work.
Training of enumerators

Instructions for and training of enumerators are most important because the quality of the census results depends primarily on enumerators.

How to be

- Be conversant with the legal provisions of the census and know their own rights and responsibilities.
- Approach the respondents with a sympathetic and persuasive attitude.
- Able to validate data given to them by holders without offending and appearing to doubt their word.
- Some have prior experience on how to interview a holder. (*In case the enumerators will not have this experience, this part of the training is essential*).

What they need

- Field work training as well;
- Special training in the use of handheld devices, if used.
- A special training with actual determination of coordinates and area measures in the field (if required) is also needed for using GPS devices.
- Read maps, GIS maps on screen, prepare usable sketches, and identify individual parcels and determine their areas, if required. Be able to estimate, if necessary, the number of scattered trees, distinguish between trees of bearing and non-bearing ages, and identify important crops.
Training in writing inspection reports

Reports for each census worker (enumerator and supervisor) must be completed periodically (daily or weekly) in order to measure the progress of the census operation. When CAPI is used geo-referencing and paradata allow census supervisors to visualize and monitor the progress of the enumeration in real time.

Aims of these reports:

• to inform the census authorities of the work progress and its relation to the planned time schedule.
• to identify any deviations and problems in progress so that proper and timely action may be taken.

How should they be?

• realistic;
• as simple as possible;
• with minimum data required to ensure the above aims;
• different forms for the enumerator, the local supervisor, and the provincial coordinator.
Training of office staff

There is a need to provide long-term training in the various aspects of the agricultural census those entrusted with the overall responsibility of organizing and conducting the agricultural census.

This training could be conducted at an international level and at least three years before the census in order to make proper preparations.

The training should include in particular:

- census methodology
- census publicity campaign and communication with users
- preparation of frames
- sampling techniques
- design of questionnaire and its field testing
- pilot census
- census enumeration
- data processing, tabulation and analysis
- preparation of census reports, dissemination of census results and archiving.
Training in the use of advanced technologies

**ICT** has a fast development implying the need of continuous updating and specialized training. Main census technical staff needs to be trained in such advanced technologies.

**Areas where advanced technologies are substituting traditional operations:**

- use of geo-referenced information systems for mapping and measurement of areas;
- management of satellite images for a first identification of land use, number of buildings and other landscape features;
- use of handheld devices to collect information from respondents;
- development of internet-based capabilities to use CASI;
- archiving and development of users-friendly online databases for data dissemination and analysis, and safe access to microdata.

Usually these training courses would be addressed to small groups and at a few venues. However, if CAPI is used, a large amount of enumerators need to be trained in the use of handheld devices.

* There have been bad experiences when insufficient time was allocated to training in the use and testing of handheld devices such as CAPI.*

* **ICT** Information and Communication Technology
Use of training aids

The quality of training can be improved considerably by making effective use of training aids.

Good training materials in general, and audio-visual training aids in particular, are very useful for ensuring uniformity of training throughout the country.

Types of audio-visual training aids:

Film or video – very useful, for example a film showing methods of interviewing holders, or agricultural and living conditions of the holder could be very effective in preparing trainees for fieldwork;

Online films – affordable to produce and distribute across country (e.g Russian Federation 2006);

Slides (charts, tables etc) – less expensive aid. They can be produced easily but should be prepared with a specific plan in mind.
Country example of structure of census staff

ESWATINI – CENSUS OF AGRICULTURE 2012/2013

The census of agriculture 2012/2013 of Eswatini covered only rural area and targeted units engaged in crop and livestock activities. Forestry and fishery activities of these units were also considered.

_Census personnel_ comprised a total of 679 staff, as follows:

- One (1) project manager + head office staff
- eight (8) sub-regional coordinators;
- Fifty-six (56) teams composed of:
  - (56) supervisors;
  - (56) drivers;
  - Five hundred and fifty five (555) enumerators (ten (10) enumerators per team).
Country example of census training

MADAGASCAR - Agricultural Census 2004-2005

• The 2004/2205 agricultural census in Madagascar training programme was deployed according to the phase.
• Training of census coordination unit:
  - Census coordinator participate to AFCAS session as part of the training program;
  - 2 staffs of the census coordination unit attended to study tour in Senegal;
• Field staff training was organized during the 2 field data collection phases (listing phase and enumeration phase).
  - For listing phase, one training session was organized for 11 regional supervisors and 64 field supervisors;
  - For enumeration phases, the training sessions was organized for 11 regional training centers to train 1080 enumerators.
• Data entry clerks have been trained during one training session.
THANK YOU