

## CHAPTER 5

### COMMUNITY-LEVEL DATA

***A new element of the 2010 round of agricultural censuses is the collection of community-level data. This chapter outlines the purpose of collecting community-level data and discusses the items suitable for inclusion in the community survey. Some methodological issues are also discussed.***

#### Introduction

5.1. Past agricultural census programmes have focused on data on the structure of agricultural holdings collected directly from each agricultural holding. These structural data concern matters that are decided upon by the holding, such as what crops to grow and what agricultural inputs to use, and therefore can only be reported by the holding itself, not by public administrations.

5.2. However, some types of administrative data are of interest in an agricultural census, especially for decentralized planning, identification of poor villages, planning of targeted area development programmes, and targeting communities for relief operations in case of natural disasters. A community-level data collection, often at the village or the commune level, can be useful for examining the infrastructure and services available to holdings. Data on whether the community is prone to natural disasters or subject to seasonal food shortages can be of interest for food security analysis. A community survey may cover agriculture-related data not able to be collected from holdings, such as the area of communal land. Often, the community-level data complements the holding-level data; for example, community-level data on the existence of farmers' associations may complement data on participation in those associations collected from each agricultural holding. For information on previous work done by FAO on community-level statistics, see *Community-level Statistics* (FAO, 1983).

5.3. There is a strong demand for community-level data in the agricultural census and, to meet this need, a community-level component has been included in WCA 2010. Countries are encouraged to include this element according to national circumstances and data requirements. Community-level data are of statistical interest for three main reasons.

5.4. First, the data are of interest in their own right in analyzing the characteristics of communities. For example, data on the percentage of communities with an agricultural input supplier can be useful in understanding farmers' constraints in the adoption of improved agricultural practices. Population or household characteristics, such as the number of people living in communities prone to natural disasters, can also be estimated.

5.5. Second, the data can be useful for analysis in relation to holding-level data. For example, one could tabulate the number of holdings growing particular cash crops against whether or not an agricultural produce market exists in the community, to help understand the way farmers' cropping patterns are influenced by access to markets. Similarly, tabulating the number of holdings participating in farmers' associations in communities where such organizations exist can help to highlight the effectiveness of those organizations.

5.6. Third, data from a community survey may be of interest for checking holding-level data collected in the agricultural census. Often, cadastral information is used for this purpose.

5.7. One factor in the collection of community-level data in the agricultural census is that it is usually necessary to make contact with the community administration in carrying out the census fieldwork. Sometimes, the community administration is involved in the census data collection itself or the listing of households or holdings. In these circumstances, community-level data can be collected at little cost.

## Defining a community

5.8. A community can be defined as a self-contained unit of social and economic activities (FAO, 1983). Housing censuses use the similar concept of locality, which is “a distinct population cluster that has a name or a locally recognized status” (UN, 1998b, paragraphs 2.49–2.51). Under these definitions, the community or locality may not be the same as the lowest administrative unit.

5.9. For statistical purposes, the unit chosen for the community survey should take account of operational factors and the circumstances of the country.

- Data collected. Often, the data requires that the community maintains certain administrative records, which are usually only available for administrative units, commonly the village or commune. Sometimes, the lowest administrative unit has no substantial administrative function, and the community unit may need to be defined at a higher level.
- Cost. The data collection and processing task must be manageable and this may influence whether to collect data at, for example, the commune or village level.
- Identifying community units. Most countries maintain lists of community units down to a certain level. Ready access to such information is needed to do a community survey.
- Stability of community units. In many countries, changes in administrative units are common and not well-coordinated, making it difficult to carry out a community survey.
- Census methodology. If EAs for the census fieldwork are based on the commune unit, for example, it would be easiest to also collect community-level data at that level. Problems may arise if EAs cross locality boundaries.

5.10. Deciding on the scope of a community survey is another issue. Normally, countries do not cover all communities in the country as part of the agricultural census, but limit the collection to those communities containing agricultural holdings. This is convenient operationally as field staff need to visit those communities to enumerate the holdings. Covering only rural communities may not be fully satisfactory because some agricultural holdings are in urban areas. Countries should endeavour to cover at least all rural communities.

5.11. Community surveys are only applicable in countries with a suitable community-level organization. Sometimes, rural areas are not organized into communities. Even if they are, the communities may not have clear-cut physical boundaries or the community administration may be weak.

## Community-level items

5.12. Many types of data are of possible interest for the community survey, and it is not possible to make specific recommendations on the community-level items each country should include in its census. Some general guidelines are provided in this section. The content of the community survey should be determined taking into account data needs and the availability of community-level data from other sources.

5.13. Countries should make every effort to coordinate community-level data from the different sources. Many countries maintain a community register or database, sometimes based on the population census. Provided a common geographic coding system is used, the agricultural census can be linked with existing community databases, so that there is no need to duplicate data already available. All community-level data collections should be coordinated, so that a series of linked community databases would be available covering specific areas of interest, such as agriculture, health and population. The agricultural census could then focus on just the agriculture-related data.

5.14. Other issues to be considered in deciding on the content of the community survey are:

- The community survey should not be used for collecting holding-level data. The holdings themselves grow crops and raise livestock, and these data should be collected directly from holdings, not by asking a community official to provide estimates. For example, the community administration cannot report on how many people are literate, as it has no way of knowing this information. If these data are required, it is better to directly ask households

some literacy-related questions. Note that population by age and sex at the national or regional level can be estimated from the holding-level collection, usually more accurately than from community records. This usually applies even if sampling is used.

- The collection of data directly from holdings is one of the features that distinguish an agricultural census from the administrative reporting systems used in many countries. The community survey should not be used to provide a quick and easy method of getting data that are better collected directly from holdings.
- Communities should not be asked to report the same data as holdings, unless the community-level data are required specifically for checking the data reported by holdings. Even here, it is often better to incorporate those data into the holding-level field system than to provide independent community-based data. For example, enumerators could correct area data reported by holdings by referring to the cadastral records.
- Community-level data are only useful if they can be presented in statistical summaries. Emphasis should be given to the tabulation needs in the design of the community survey. More information on tabulation for the community survey is given in paragraphs 12.30–12.37.
- The community-level items should be limited to key administrative information or aspects of the community that are well-known to people in the community, such as weather conditions, economic activities, and whether certain services exist.
- The number of community-level items should be kept to a minimum, normally, 10-20 items.

5.15. A list of possible items for inclusion in the community survey is given below. The list is not exhaustive. Some items may already be available in existing databases and would not need to be collected again in the agricultural census.

#### Geography

- 2101 Location
- 2102 Agro-ecological, climatic, topographical, or soil types
- 2103 Land use
- 2104 Area of communal grazing land
- 2105 Area of communal forest
- 2106 Travelling time to the nearest major urban centre (by season, if applicable)
- 2107 Whether the community has year-round access to the nearest urban centre by a motorable road
- 2108 Whether the community is prone to natural disasters, such as droughts and floods (if applicable)

#### Socio-economic conditions

- 2201 Population according to different population groupings
- 2202 Number of households
- 2203 Economic status (if applicable)
- 2204 Economic activities
- 2205 Whether there are seasonal food shortages (if applicable)

#### Community infrastructure and services

- 2301 Presence of a fertilizer dealer; if not, travelling time to the nearest fertilizer trading centre (by season, if applicable)
- 2302 Presence of a pesticides dealer; if not, travelling time to the nearest pesticides trading centre (by season, if applicable)
- 2303 Presence of a seed dealer; if not, travelling time to the nearest seed trading centre (by season, if applicable)
- 2304 Presence of a credit institution; if not, travelling time to the nearest credit institution (by season, if applicable)
- 2305 Presence of irrigation facilities
- 2306 Area equipped for irrigation

- 2307 Availability of veterinary services; if not, travelling time to the nearest veterinary services (by season, if applicable)
- 2308 Presence of a periodic or permanent agricultural produce market; if not, travelling time to the nearest periodic or permanent agricultural produce market (by season, if applicable)
- 2309 Existence of agricultural produce collection network
- 2310 Presence of food storage facilities.
- 2311 Presence of agricultural processing facilities
- 2312 Presence of facilities for maintaining agricultural machinery
- 2313 Existence of farmers' associations, cooperatives, and other bodies providing support and services to farmers.
- 2314 Availability of agricultural extension service
- 2315 Whether electricity is connected
- 2316 Presence of a primary school; if not, travelling time to the nearest primary school (by season, if applicable)
- 2317 Presence of a health facility; if not, travelling time to the nearest health facility (by season, if applicable)
- 2318 Presence of radio, telephone, and Internet services
- 2319 Availability of public transport: bus, train, boat

#### Development programmes

- 2401 Presence of specific development projects in the community

### **Concepts and definitions for community-level items**

5.16. Location (Item 2101) is normally based on a geographic coding system (see paragraphs 11.4–11.6). This item is needed to summarize the data by geographical groupings, to relate the data to holding-level data, and to link community databases.

5.17. Agro-ecological, climatic, topographical, or soil types (Item 2102). Countries may have one or more standard groupings of areas, which may reflect different agricultural conditions, climatic conditions, or even living standards and ethnic groups.

5.18. Land use (Item 2103) should be compatible with the classification used in the holding-level collection (see paragraphs 11.20–11.39). Land use data at the community level may be shown in more detail, such as showing land under water or identifying different forest types. Land use at the community level provides a comprehensive picture of all land in the community, not just the land operated by holdings as obtained in the holding-level collection.

5.19. Area of communal grazing land (Item 2104) and area of communal forest (Item 2105) help to fill in the gaps from the holding-level collection.

5.20. Travelling time to the nearest major urban centre (Item 2106). Travelling time data provide a good picture of the isolation of the community, and the effect this has on people's agricultural practices and living standards. Travelling time may differ between seasons, such as during the wet and dry seasons. The related item whether the community has year-round access to the nearest urban centre by a motorable road (Item 2107) helps to highlight the transportation problems faced by people in the community.

5.21. Whether the community is prone to natural disasters (Item 2108) is important for countries that face regular crises because of flooding or other natural disasters. This is often a major cause of food insecurity and may influence farmers' agricultural practices.

5.22. Population according to population group (Item 2201) can be useful in classifying the community by type, such as according to ethnic group. Population data can also be useful for providing population-based estimates based on the community-level data. Number of households (Item 2202) is used to provide household-based estimates for community-level data.

5.23. Economic status (Item 2203). In some countries, each community is assigned an economic

status measure, which can be useful to analyse holding-level characteristics in relation to whether the community is “rich” or “poor”.

5.24. Main economic activities (Item 2204) should be based on the classification of activities used in Item 0016 of the holding-level collection.

5.25. Whether there are seasonal food shortages (Item 2205). This item is suitable for countries where seasonal factors affect food supplies.

5.26. Community infrastructure and services (Items 2301–2319). Countries should choose items suited to national conditions. The key for these items is whether people have ready access to specific infrastructure and services in the community itself or in a nearby centre; hence, the travelling time component in many items.

5.27. Presence of specific development projects in the community (Item 2401). This item is of interest where specific government or other development programmes are implemented to raise living standards or for agricultural development. These programmes might be administered by the government, non-government organizations, international agencies, or on a bilateral basis. The data provided are of interest to evaluate the benefits of those programmes.

## **Methodological considerations**

5.28. The approach used for the collection of community-level data in the agricultural census will depend on the organization of fieldwork for the collection of holding-level data. The fieldwork for an agricultural census is usually organized by dividing the country into suitable EAs (see paragraphs 3.60–3.61). EAs often correspond with administrative units such as villages, but this may not always be the level at which community-level data are required. Often, administrative units are sub-divided to form suitable sized EA units, making it difficult to coordinate the community- and holding-level collections.

5.29. Where the community administration prepares the list of households or holdings for the agricultural census, it may be possible to administer the community questionnaire at the same time. Often, census field staff personally visit each community to obtain the household/holding list, and this can provide a good opportunity to collect the community-level data.

5.30. Even if the community administration does not do the household/holding listing, it may be involved in the holding survey operation itself. Often, community officials are used to help locate each household. Sometimes, they help in interviewing households – for example, as translators. In these circumstances, the community questionnaire can be administered at a suitable time.

5.31. Consideration should be given to the suitability of collecting community-level data by mail, rather than by interview. The data collected should be simple enough for the community administrations to fill out the questionnaire themselves. Costs may be a factor in this regard.

5.32. Sampling methods will usually not be suitable for the community survey. If the core census module is done on a complete enumeration basis, the community survey should be done the same; to do a sample community survey in conjunction with a full enumeration core census of holdings would make it impossible to link holding-level and community-level data in all cases. This would limit the usefulness of the community-level data for census analysis purposes.

5.33. However, sampling methods may be suitable where the core module is done on a sample basis. In a typical sample-based core module, a sample of EAs is selected, household/holding lists are prepared for each sample EA, and then a sample of households/holdings is enumerated for the census. The same sample areas could be used for the community survey, on the basis that those EAs not selected in the sample are not contacted at all during the collection of holding-level data and would require a special visit to collect the community-level data. A sample community survey would be suitable for analysing holding-level data in relation to community-level data, as such analysis only requires community-level data from the communities containing the sample holdings. However, the sampling approach may not be suitable for summarizing community-level data.

