

PART TWO

AGRICULTURAL CENSUS ITEMS – CONCEPTS, DEFINITIONS AND TABULATIONS

CHAPTER 11

CONCEPTS AND DEFINITIONS OF AGRICULTURAL CENSUS ITEMS

This chapter contains a description of the concepts and definitions for the agricultural census core and supplementary items given in Chapter 4. The concepts and definitions have been developed taking into consideration international standards and the need for comparability with previous agricultural censuses and with other data sources. Any major changes from previous programmes are highlighted. Countries will need to adapt the concepts and definitions given to meet their own needs and circumstances.

Introduction

11.1. This chapter provides recommended concepts and definitions for the agricultural census core and supplementary items shown in Chapter 4. The concepts and definitions are based on international standards, where applicable, to ensure that agricultural census results are comparable with other data sources. Where items were included in earlier agricultural census programmes, the concepts and definitions are generally the same as those used previously. Explanations are provided, as needed, to help make comparisons with previous agricultural census data.

11.2. In an integrated agricultural statistics system, the need for uniformity in concepts and definitions between the agricultural census and other agricultural statistics is also important. Often, there are well-established standards for current agricultural statistics; for example, many countries already have standards for reporting on crops or seasons, which should be consistent with the agricultural census.

11.3. It is recognized that countries will need to adapt the standards given in this chapter to meet their needs and circumstances, but this should be done in such a way that the census data are compatible with international standards. Where it is necessary to depart from these standards, the differences should be highlighted in the presentation of the census results, and explanations given as to how the national data can be compared with those from other countries.

General core items

0001 IDENTIFICATION AND LOCATION OF AGRICULTURAL HOLDING

11.4. The location of the agricultural holding is needed to assign agricultural holdings to administrative units or agro-ecological zones, which are key classification items in the tabulation of agricultural census results. Usually, the location of a holding is identified by where the farm buildings and agricultural machinery are located. Care is needed if the holding comprises two or more parcels. Sometimes, the location of each parcel is also identified (see paragraph 11.55). Often, the holder's residence is used as the holding location.

11.5. Location is normally identified through a geographic coding system, based on the administrative structure of the country. Codes are provided for each administrative unit such as province, district and village. This identifies the location of the holding down to the lowest administrative unit. Where a standard national geographic coding system exists, it should be used for the agricultural census to make it easier to link data between the different sources.

11.6. Other types of geo-coding systems can also be used. It is now possible to geo-reference holdings with the use of Global Positioning Systems, and countries are encouraged to move in this direction. This can help in the presentation of census results through Geographic Information Systems and to link data to other sources.

0002 LEGAL STATUS OF AGRICULTURAL HOLDER

- An individual
- Two or more individuals
- Juridical person

Holders may also be classified into the following sectors:

- *Household sector*
 - *Single-holding household*
 - *Multiple-holding household*
 - *Partnership of two or more households*
- *Non-household sector*
 - *Corporation*
 - *Cooperative*
 - *Government*
 - *Other*

11.7. Item 0002 is about the legal status of the agricultural holder¹. Legal status refers to the juridical aspects under which the agricultural holding is operated. It also refers to other aspects about the type of holding. From the juridical point of view, a holding may be operated by a single individual, jointly by several individuals with or without contractual agreement belonging to the same or to different households, or by a juridical person: corporation, cooperative, governmental institution, church, etc. Legal status of holder is an important classification item especially in combination with the sector where the holder belongs (see paragraph 11.8)., This item can also be useful for sampling frame purposes.

11.8. The sector where the holder belongs may be classified as “household sector” and “non-household sector”. Countries are encouraged to distinguish between these two sectors in the census tabulation. Holdings in the household sector are holdings that are operated by household members. Usually there is only one holding in a household (single-holding household), but there can be two or more holdings in a household (multiple-holding household). A holding may also consist of a partnership of two or more households. In many developing countries, most agricultural holdings are in the household sector.

11.9. Non-household holdings are those in sectors other than the household sector. Corporations and cooperatives are defined within the context of national laws and customs. Cooperatives include several kinds of organizations in which the principles of individual, joint ownership or leasehold are combined to various degrees. The other sector includes tribes, clans, private schools and religious institutions. Government holdings are agricultural production entities operated by a central or local government directly or through a special body.

11.10. The reference period is the day of enumeration.

0003 SEX OF AGRICULTURAL HOLDER

- *Male*
- *Female*

11.11. Item 0003 is important for analyzing the gender aspects of agricultural production and, in particular, to examine the role of women in managing agricultural holdings. This item could also be useful as the basis for a sampling frame for special gender surveys.

11.12. Data on sex of agricultural holder is collected only for holdings in sector “single-holding household” in Item 0002. Data usually refer to the day of enumeration. Where there are two or more

¹ See definition of agricultural holder - paragraphs 3.36-3.41

co-holders in a holding, the sex of each person should be reported. For the definition of an agricultural holder, see paragraphs 3.36–3.41. See Figure 12.1 for information on how to tabulate sex of holder data.

11.13. It is not expected that the core census module will include the collection of demographic data for each person in the household, and therefore it would be necessary to collect data on the sex (and age) of the holder directly from the respondent. Where demographic data are collected, sex of holder can be determined by identifying the holder and linking this to the personal data (Item 0711).

0004 AGE OF AGRICULTURAL HOLDER

11.14. Age of holder is important for studying the relationship between age and the characteristics of agricultural holdings and, in particular, to compare young and old farmers. It is also useful for analyzing gender issues.

11.15. Age refers to the age in completed years at the time of the census. The item is collected only for holdings in sector “single-holding household” in Item 0002. Where there are two or more co-holders in a holding, the age of each person should be reported. See Figure 12.1 for information on how to tabulate age of holder data.

11.16. For the definition of an agricultural holder, see paragraphs 3.36–3.41. For information on data collection issues, see paragraph 11.13 and paragraph 11.217.

0016 OTHER ECONOMIC PRODUCTION ACTIVITIES OF THE HOLDING'S ENTERPRISE

- *Other agricultural production*
- *Agricultural services*
- *Hunting, trapping, game propagation and related service activities*
- *Forestry, logging and related service activities*
- *Fishing, aquaculture and related service activities*
- *Manufacturing*
- *Wholesale and retail trade*
- *Hotels and restaurants*
- *Other*

11.17. By definition, an agricultural holding consists of the agricultural production activities of an enterprise, where an enterprise is a corporation, a government institution, or (most commonly) a household. An enterprise containing an agricultural holding may be engaged in production activities other than agricultural production. For example, a household may operate a shop or restaurant, in addition to operating the agricultural holding. Item 0016 is included in the core census module to understand the relationship between agricultural production activities and other economic production activities.

11.18. Other economic production activities are economic production activities undertaken by the enterprise, other than agricultural production on the holding. This may include fishing, collecting forestry products, craft activities, and operating a family business. It does not include paid work as an employee. Normally, the reference period is the census reference year.

11.19. Nine activity categories are shown, based on ISIC (Rev. 3.1) (UN, 2004b):

- Other agricultural production refers to agricultural production activities of the enterprise outside the holding, such as where there are two holdings in a household.
- Agricultural services cover agricultural production related work done under contract on other holdings.
- Hunting, trapping, game propagation and related service activities include hunting for food, fur and skin.

- Forestry, logging and related service activities include growing of standing timber, logging, gathering of wild forest materials, and forest management services. These activities may be undertaken on land forming part of the holding or elsewhere.
- Fishing, aquaculture and related service activities cover commercial fishing and related activities, including aquaculture. These activities may be carried out on land forming part of the holding or elsewhere. Note that this activity class covers all aquacultural activities of the enterprise, whereas Item 0014 only covers aquaculture carried out in association with agricultural production.
- Manufacturing includes a whole range of activities associated with transforming raw materials into new products. For households, the most common manufacturing activities are food processing, making clothes and other textile materials, tanning, and making wood products.
- Wholesale and retail trade covers services associated with the sale of goods at the final stages of distribution, such as through a market or shop.
- Hotels and restaurants covers all accommodation and food services.
- Other covers all other economic production activities, including activities related to construction and transportation.

Theme 01: Land

Core items

0007 AREA OF HOLDING ACCORDING TO LAND USE TYPES

11.20. Land use refers to activities – such as growing crops, raising livestock or cultivating fish – carried out on the land making up the holding with the intention of obtaining products and/or benefits. Land use should be distinguished from “land cover”, which describes the physical characteristics of the land, such as grassland or forest. In the agricultural census, the area of the holding is classified according to its main land use. See paragraphs 11.40–11.45 for more information on area of holding.

11.21. There is no universally accepted standard land use classification. For the purposes of the agricultural census, it is recommended that seven basic land use classes be identified:

- land under temporary crops;
- land under temporary meadows;
- land temporarily fallow;
- land under permanent crops;
- permanent meadows and pastures;
- forest or other wooded land;
- other land.

11.22. Definitions of these land use classes are given in paragraphs 11.27–11.37. For presenting agricultural census results, the seven land use classes need to be grouped in a suitable way. There are many ways to do this, using terms such as agricultural land, cultivated land, cropland and arable land. There are no standard definitions for many of these terms. For example, some countries define arable land as land that is potentially cultivable, whereas other countries consider it to be land under temporary crops or meadows. FAO recommends the land use classification shown in Figure 11.1.

Figure 11.1: Classification of land use

I	II	III	IV
Agricultural land	Cropland	Arable land	Land under temporary crops
			Land under temporary meadows
			Land temporarily fallow
	Permanent meadows and pastures	Land under permanent crops	
Forest or other wooded land			
Other land			

11.23. This classification is a condensed version of the one used in earlier agricultural census programmes. The main differences from the 2000 programme are:

- The concept of “productive land” is no longer used. Countries wishing to continue to use this concept should define productive land as the sum of “agricultural land” and “forest or other wooded land”.
- The concept of “cultivated land” is no longer used. This is equivalent to “cropland” under the recommended classification.
- The category “land under protective cover” is no longer used in the classification. Land previously shown in this category is included under “arable land” or “land under permanent crops”. Data on land under protective cover are recommended for inclusion in the sample component of the agricultural census as Item 0327.
- “Other arable land” is included under “land temporarily fallow”.
- “Permanent meadows and pastures” is not further sub-divided by whether it is cultivated or naturally grown.
- “Other land” is not further sub-divided according to its potential for development.

11.24. A country may prefer to use its own land use classes and classification because they are well-established and meet national needs. Countries doing so should ensure that the land use classes can be aggregated up to the seven basic land use types. Land use data should also be presented according to the FAO recommendations to enable international comparisons to be made.

11.25. Land use data are often collected at the parcel level. A parcel may have more than one land use and, normally, provision is made in the questionnaire for the area of the parcel to be split into more than one land use type. For example, if some fields in a parcel are used for growing temporary crops and others are fallow, the area of temporary crops and fallow land are recorded accordingly.

11.26. Sometimes, there is a mixture of land uses in a parcel or field that cannot be subdivided – for example, where permanent and temporary crops are grown together as associated crops (see paragraph 11.109), or where the same land is used for aquaculture in one season and for growing rice in another season. In such cases, land use should be determined on the basis of its main use. Main use is normally defined on the basis of the value of production from each activity, such as for associated permanent/temporary crops, aquaculture/agriculture, or agriculture/forestry combinations. Where agriculture, aquaculture or forestry activities are carried out on the same land as other activities, the activities related to agriculture, aquaculture or forestry normally take precedence in determining land use.

11.27. Land under temporary crops includes all land used for crops with a less than one year growing cycle; that is, they must be newly sown or planted for further production after the harvest. Some crops

that remain in the field for more than one year may also be considered as temporary crops. Asparagus, strawberries, pineapples, bananas and sugar cane, for example, are grown as annual crops in some areas. Such crops should be classified as temporary or permanent according to the custom in the country.

11.28. The area of land under temporary crops refers to the physical areas of land on which temporary crops are grown (often referred to as net cropped area). The sum of the areas of all temporary crops grown (gross cropped area) may be greater than net cropped area because of successive cropping (see paragraphs 11.104–11.105). The comparison between net cropped area and gross cropped area provides the basis for measuring the cultivation intensity. To avoid confusion with other similar terms, viz., gross area and net area used in other FAO publications, the reader is encouraged to refer to paragraphs 35 and 58 of the publication FAO (1982).

11.29. Land under temporary meadows and pastures include land temporarily cultivated with herbaceous forage crops for mowing or pasture. A period of less than five years is used to differentiate between temporary and permanent meadows. If country practice differs from this, the country definition should be clearly indicated in census reports.

11.30. Land temporarily fallow is arable land at prolonged rest before re-cultivation. This may be part of the holding's crop rotation system or because the normal crop cannot be planted because of flood damage, lack of water, unavailability of inputs, or other reasons.

11.31. Land is not considered temporarily fallow unless it has been, or is expected to be, kept at rest for at least one agricultural year. If the census is conducted before sowing or planting has been completed, the area lying fallow at that time that will be put under crops soon afterwards should be classified as land under temporary crops, not as fallow land. Fallow land temporarily used for grazing should be classified as "fallow" if the land is normally used for growing temporary crops.

11.32. Land remaining fallow for too long may acquire characteristics requiring it to be reclassified, such as "permanent meadows and pastures" (if used for grazing), "forest or other wooded land" (if overgrown with trees), or "other land" (if it becomes wasteland). A maximum idle period should be specified – five years is usually suitable. Land cultivated on a two- or three-year rotating basis is considered to be fallow if it was not cultivated during the reference year. Land temporarily fallow should be distinguished from land abandoned by shifting cultivation; the former is part of the holding, whereas the latter is not.

11.33. Land under permanent crops refers to: land cultivated with long-term crops which do not have to be replanted for several years; land under trees and shrubs producing flowers, such as roses and jasmine; and nurseries (except those for forest trees, which should be classified under "forest or other wooded land"). Permanent meadows and pastures are excluded from land under permanent crops.

11.34. Permanent meadows and pastures include land used permanently (for five years or more) to grow herbaceous forage crops, through cultivation or naturally (wild prairie or grazing land).

11.35. Forest and other wooded land is land not classified as mainly "agricultural land" that satisfies either of the following definitions:

- Forest land is land with crown cover of more than 10 percent of trees able to reach a mature height of 5 metres or more. It includes natural and plantation forests. Areas that are temporarily not under trees but are expected to revert to forest are included. Forest tree nurseries that form an integral part of the forest should be included.
- Other wooded land is land with: (i) crown cover of 5–10% for trees able to reach a height of 5 metres or more at maturity; or (ii) crown cover of more than 10% for trees not able to reach a height of 5 metres at maturity; or (iii) shrub or bush cover of more than 10%.

11.36. A clear distinction must be made between "forest and other wooded land" and "land under permanent crops". Plantations of rubber, palm, and other cultivated food tree crops are generally considered to be permanent crops, whereas plantations of bamboo, cork oak, eucalyptus for oil, or any

other cultivated non-food tree crops are considered to be forest and other wooded land. However, there may be some special cases, which countries should handle according to national conditions and practices. The treatment of borderline cases should be clearly stated in the presentation of census results.

11.37. Other land includes all other land on the holding, not elsewhere classified. It includes uncultivated land producing some kind of utilizable vegetable product, such as reeds or rushes for matting and bedding for livestock, wild berries, or plants and fruit. It also includes land which could be brought into crop production with little more effort in addition to that required in common cultivation practices. Also included under this category is: land used for aquaculture; land occupied by buildings; parks and ornamental gardens; roads or lanes; open spaces needed for storing equipment and products; wasteland; land under water; and any other land not reported under previous classes.

11.38. Based on FAO's recommended land use classification in Figure 11.1, arable land is land that is used in most years for growing temporary crops. It includes land used for growing temporary crops in a twelve month reference period, as well as land that would normally be so used but is lying fallow or has not been sown due to unforeseen circumstances. Arable land does not include land under permanent crops or land that is potentially cultivable but is not normally cultivated. Cropland is the total of arable land and land under permanent crops. Agricultural land is the total of cropland and permanent meadows and pastures.

11.39. Data on area of holding must refer to a point of time, usually the day of enumeration or another day close to it. In determining land use, reference is made to the activities carried out during a twelve-month or even longer reference period. Usually, the census reference year is used for this purpose. If the land use changed during the year – for example, fruit trees were planted on formerly rice land – the land should be assigned to the present use.

0008 TOTAL AREA OF HOLDING

11.40. Area of holding provides a measure of the size of the holding, which is an important element in the agricultural census analysis. Total area of holding is a derived item, obtained by summing the areas under each of the land use categories (see paragraphs 11.20–11.39). Often, land data are collected parcel by parcel and the total area of holding is derived by summing the area of each parcel.

11.41. Total area of holding is the area of all the land making up the agricultural holding. It includes all land operated by the holding without regard to title or legal form. Thus, land owned by members of a household but rented to others should not be included in the area of the holding. Conversely, land not owned by members of a household but rented from others for agricultural production purposes should be included in the holding area. The area of holding may be zero, such as where the holding keeps livestock but has no land; this is called a landless holding.

11.42. The holding's land may consist of one or more land parcels, located in one or more separate areas or in one or more territorial or administrative units, providing the parcels are part of the same economic production unit and share the same production means, such as labour, farm buildings, machinery and draught animals. See paragraph 3.33 for more information on defining holding units when land is located in more than one administrative unit.

11.43. In determining the area of the holding, the following types of land should be included:

- agricultural land, land used for growing temporary crops, land used for permanent crops, meadows and pastures, and fallow land;
- kitchen gardens;
- forest or other wooded land;
- bodies of water owned or in owner-like possession by the holding, regardless of their use;
- other farmyard and land occupied by farm buildings;

- land for which a holding does not have any rights to agricultural use, except for the products of the trees grown on it.

11.44. The following special cases should be noted:

- Where an agricultural holding is operated by a household, the land area of the household's house should be included, provided the house is located on the holding (and not, for example, in a nearby village or town), and is used solely for residential purposes.
- Where shifting cultivation is present, the area of holding should include the area under crops during the census reference year, and the area prepared for cultivation but not sown or planted at the time of enumeration. Land abandoned prior to the reference period should be excluded.
- Open rangeland, such as land open to communal grazing, is not considered to be part of the holding. For holdings having access to communal grazing land, their share of such land should not be included in the area of the holding unless the holding has been specifically assigned a certain area delimited by fencing or other form of boundary demarcation.
- A body of water owned or in owner-like possession by the holding is included as part of the area of holding, but a body of water that is rented from others for use for aquaculture or other purposes should be not included in the area of the holding.

11.45. Data on area of holding must refer to a point of time, usually the day of enumeration or another day close to it. Where a holder bought land during the census reference year, the area of land bought should be included in the area of the holding; where a holding sold land during the census reference year, the area sold should be excluded. See paragraph 3.35 for more information.

0009 LAND TENURE TYPES ON THE HOLDING

- *Legal ownership or legal owner-like possession*
- *Non-legal ownership or non-legal owner-like possession*
- *Rented from someone else*
- *Other types of land tenure*

11.46. Item 0009 refers to whether the holding is operated under the specific land tenure types. A holding may have one or more tenure types corresponding to each land parcel. This item is different from earlier agricultural census programmes, which provided for data on the area of the holding under each land tenure type – this is now included as supplementary Item 0103.

11.47. Land tenure refers to the arrangements or rights under which the holder operates the land making up the holding. Unlike earlier programmes, a distinction is made between legal and non-legal ownership, as this is one of the keys to tenure security. There are many different systems of formal and informal land tenure around the world and the distinction between legal and non-legal ownership is often blurred. Some broad guidelines are given in the following paragraphs, but it is recognized that countries need to define land tenure types according to national circumstances.

11.48. Broadly speaking, legal ownership or legal owner-like possession describes land rights that provide statutory security of tenure. Security of tenure has various aspects. Importantly, the ownership must be recognized by the state, and administrative structures must be in place to ensure that property rights are enforceable. This may be done through a formal land title system, but could also include certain forms of customary land tenure arrangements where land rights are registered or certified in some way. Typically, legal ownership implies that the owner of land has the right to determine how the land is used (within certain constraints), and may have the right to sell or rent out the land. It also implies that the owner may access credit using the land as collateral. The following types of tenure arrangements may be included under this heading:

- The holder or members of the holder's household possess title of ownership, which gives the

holder the right to determine the nature and extent of the use of the land.

- The land is held under conditions that enable it to be operated as if legally owned by the holder or members of the holder's household. A common type of legal owner-like possession is where land is operated under hereditary tenure, perpetual lease, or long-term lease, with nominal or no rent.
- The land is held under a tribal or traditional form of tenure, which is legally recognized by the state. Such arrangements usually involve land being held on a tribal, village, kindred or clan basis, with land ownership being communal in character but with certain individual rights being held by virtue of membership in the social unit. Such arrangements can be formalized through the establishment of legal procedures to identify the community's land and to manage the land rights of community members.

11.49. Non-legal ownership or non-legal owner-like possession describes a variety of informal land tenure arrangements, which do not provide security of tenure, and where circumstances could arise where the holder may be dispossessed of the land. The following types of tenure arrangements may be included under this heading:

- The holder or members of the holder's household have operated the land without interruption for a long period without any form of legal ownership, title, long-term lease, or payment of rent.
- The land is operated under a system in which a rent-free plot of tribal or other communal land is received and retained as long as it is kept under cultivation by the recipient's personal and household labour, but which cannot be sold or mortgaged.
- The holder is operating land owned by the state, without any legal rights.
- The land operated by the holder is held under a tribal or traditional form of tenure, which is not recognized by the state and outside the realm of the law.

11.50. Rented land from someone else means land that is rented or leased by the holding from other persons, usually for a limited time period. Rental arrangements can take different forms. Land may be rented for an agreed sum of money and/or produce, for a share of the produce, or in exchange for services. Land may also be granted rent free. For more information on different rental conditions, see paragraph 11.59.

11.51. There are various other types of land tenure. One example is land operated on a squatter basis; that is private or public land operated without ownership title and without the owner's consent. Other land tenure types include: land operated under transitory tenure forms, such as trusteeship; land received by members of collective holdings for individual use; and land under inheritance proceedings. Countries may add further classes to suit local conditions.

11.52. Land tenure refers to the current status of the land operated by the holding. The collection of data should relate specifically to that land. Land rented out to others should be excluded. The reference period for land tenure data is usually the day of enumeration. For information on tabulation of land tenure data, see Figure 12.1.

Supplementary items

0101 LOCATION (for each parcel)

11.53. For the purposes of the agricultural census, a holding is divided into parcels, where a parcel is any piece of land, of one land tenure type, entirely surrounded by other land, water, road, forest or other features not forming part of the holding or forming part of the holding under a different land tenure type. A parcel may consist of one or more fields or plots adjacent to each other. The concept of a parcel used in the agricultural census may not be consistent with that used in cadastral work. The reference period is a point of time, usually the day of enumeration.

11.54. A distinction should be made between a parcel, a field and a plot. A field is a piece of land in a

parcel separated from the rest of the parcel by easily recognizable demarcation lines, such as paths, cadastral boundaries and/or hedges. A field may consist of one or more plots, where a plot is a part or whole of a field on which a specific crop or crop mixture is cultivated.

11.55. The location of the parcel is important when disaggregating land data by administrative units. In an agricultural census, the location of a holding is usually identified by where the farm buildings or agricultural machinery are located (see paragraph 11.4). If the location of each parcel is not identified, all parcels would be assigned to the location of the holding, which could lead to inconsistencies with data from other sources. The location of the parcel refers to the administrative unit in which the parcel is located. For more on collecting location data, see paragraphs 11.5–11.6.

0102 AREA (for each parcel)

11.56. For the definition of a parcel, see paragraphs 11.53–11.54. For information on how to determine the area of holding, see paragraphs 11.40–11.45. Note that the sum of the parcel areas must be equal to the total area of the holding.

0103 LAND TENURE (for each parcel)

- *Legal ownership or legal owner-like possession.*
- *Non-legal ownership or legal owner-like possession.*
- *Rented from someone else.*
- *Other types of land tenure.*

11.57. “Land tenure types” was included as Item 0009 in the list of recommended core census items to provide data on whether the holding had the specified land tenure types. Item 0103, land tenure, refers to the tenure type of each parcel. This information can be used in conjunction with the parcel area to estimate the area under different land tenure types.

11.58. Note that a parcel must be of one tenure type (see paragraph 11.53). Refer to paragraphs 11.46–11.52 for definitions of land tenure and a description of the different land tenure types. The reference period is usually the day of enumeration.

0104 TERMS OF RENTAL (for each parcel)

- *For an agreed amount of money and/or produce*
- *For a share of produce*
- *In exchange for services*
- *Under other rental arrangements*

11.59. This item relates to the conditions under which land is rented from others. It applies to parcels “rented from someone else” in Item 0103, and refers to the current rental arrangements. Rental arrangements may take different forms.

- Land rented for an agreed sum of money and/or produce is usually the result of a straightforward transaction between the owner of the land and the holder, who takes responsibility for managing and operating the land.
- Share of the produce, or in exceptional cases an equivalent in money, covers the situation where a share amount is agreed upon by the owner and the holder depending on local conditions and the type of agriculture involved. Technical responsibility for management is usually exclusively with the holder, but is sometimes shared, to a limited degree, with the owner. Here, the owner may contribute tools, fertilizers or other aids, and may also share the economic risks.
- Exchange for services refers to where the holder is granted use of the land in return for services. Often, it is in lieu of wages, such as where an agricultural labourer operates a piece of land in

return for which he/she must work, unpaid, for the landlord for a certain number of days. Another example is where a holder is granted use of land in partial payment for services to government, religious organization or other institution.

- Other rental arrangements include land granted rent free, perhaps under stipulated conditions such as growing certain crops.

0105 PRESENCE OF SHIFTING CULTIVATION (for each parcel)

11.60. Shifting cultivation is a farming practice whereby a particular piece of land is cultivated for some years and then abandoned for a period sufficient to restore its fertility by natural vegetative growth before being re-cultivated. Often, fertilizers are not used. As a result, the productivity of the cultivated land quickly deteriorates and the land is abandoned because it becomes economically unviable to continue cultivating the land. Abandoned land usually takes a long time to regain fertility by natural processes. Sometimes, farmers cultivate the land on a rotating basis. Some holders move their dwellings when they shift to new land; others do not. Shifting cultivation is also known as “slash-and-burn cultivation”.

11.61. Data are collected in respect of land cultivated using shifting cultivation methods during a twelve month period, usually the census reference period.

0106 NUMBER OF YEARS SINCE CLEARED (for each parcel)

11.62. The purpose of this item is to better understand the extent of recent land clearances, especially where shifting cultivation is present or where deforestation is a concern. Usually, it will only be necessary to collect data in broad ranges, such as: in the last one year; 1–3 years ago; 4 or more years ago.

11.63. Where different parts of the parcel are cleared at different times, the time when most of the land was cleared should be reported. If land is re-cleared after being left uncultivated for a long time, the most recent land clearance should be taken.

0111 PRESENCE OF SOIL DEGRADATION: TYPE AND DEGREE (for the holding)

- *Soil erosion (none/light/moderate/severe)*
- *Chemical degradation (none/light/moderate/severe)*
- *Physical degradation (none/light/moderate/severe)*

11.64. Soil degradation is the decline in soil quality caused by natural processes or, more commonly, improper use by humans. Its consequences include: loss of organic matter; decline in soil fertility; decline in structural condition; erosion; adverse changes in salinity, acidity or alkalinity; and the effects of toxic chemicals, pollutants or excessive flooding.

11.65. Three categories of soil degradation are shown. Soil erosion is the displacement of soil material by running water, rainfall, wind or other factors, resulting in a decline of arable layers. Chemical degradation refers to deterioration in the chemical make-up of the soil because of loss of nutrients and/or organic matters, salination, acidification or pollution. Physical degradation refers to the physical deterioration of the soil, such as compaction, crusting and sealing, water-logging, and subsidence.

11.66. Degree refers to the extent of the particular type of degradation, as follows:

- None: there is no degradation of the given type on the holding.
- Light: the productivity of the land on the holding is slightly reduced but restoration would be possible with modifications in the farm management system.

- Moderate: the productivity of some of the holding's land is considerably reduced, and substantial improvements would be needed to restore full agricultural potential.
- Severe: most of the holding's land is so badly degraded that it cannot be recovered and agricultural production is no longer possible in much of the holding. "Desertification" is one type of severely degraded land.

11.67. The intention of Item 0111 is not to get a technical assessment of the state of the holding's land, but to get the holder's overall impressions of the extent to which land degradation is present on the holding and the effect it is having on agricultural output. It is usually not worthwhile collecting these data parcel by parcel; a broad assessment for the holding as a whole is usually sufficient. Collecting soil degradation data can be difficult, and questionnaires need to be carefully designed. Specific questions may need to be asked about the most common types of soil degradation, and enumeration aids provided to help enumerators assess the extent of the degradation. The reference period for soil degradation data is usually the day of enumeration.

Theme 02: Irrigation and water management

Core items

0010 PRESENCE OF IRRIGATION ON THE HOLDING

11.68. Item 0010 is recommended for inclusion in the core module to provide a sampling frame for the census supplementary irrigation survey and for other irrigation surveys. This item also helps to better understand cropping practices and the constraints on improving agricultural productivity.

11.69. Irrigation refers to purposely providing land with water, other than rain, for improving pastures or crop production. Irrigation usually implies the existence of infrastructure and equipment for applying water to crops, such as irrigation canals, pumps, sprinklers or localized watering systems. However, it also includes manual watering of plants using buckets, watering cans or other devices. Uncontrolled land flooding by overflowing of rivers or streams is not considered irrigation.

11.70. Irrigation includes any process under which water is moved from a water source to apply to an agricultural crop. Water for irrigation may come from various sources, including rivers, dams or wells. The irrigation water may be the product of a major irrigation scheme serving many farmers over a large area, or a local scheme serving a small community. Farmers may also carry out irrigation individually using informal arrangements to obtain water from rivers, streams, wells or ponds, using equipment such as a pump or manual methods such as buckets. In urban and peri-urban areas, irrigation may be carried out with hoses and buckets, sometimes using the municipal water supply.

11.71. Irrigation implies the "fully controlled" supply of water, as opposed to other types of water management where the availability of water depends on rainfall conditions. Water management activities such as controlling flood waters to water crops (spate irrigation), water control methods in wetland areas, and flood recession cultivation should not be included as irrigation. These types of activities are covered in Item 0206 in the supplementary component. The use of water from water harvesting facilities, such as roof water harvesting, may be included as irrigation if the water supply is reliable.

11.72. Item 0010 refers to whether irrigation took place on the holding during a twelve-month reference period, usually the census reference period. The item relates to the actual use of irrigation, not to whether the holding is equipped for irrigation. The infrastructure for irrigation may exist on a holding – that is, irrigation facilities such as canals and sprinkler systems are available – but these facilities may not actually be used by the holding during the reference year because of water shortages, lack of fuel, or inability to pay water fees. Irrigation refers to whether water was provided, regardless of whether the quantity of water was sufficient.

Supplementary items

0201 AREA OF LAND IRRIGATED ACCORDING TO LAND USE TYPE (for the holding)

- *Land under permanent crops*
- *Land under temporary crops*
 - *Single-irrigated crop*
 - *Multiple-irrigated crops*

11.73. See paragraphs 11.69–11.72 for the definition of land irrigated. See paragraph 11.33 for the definition of land under permanent crops and paragraphs 11.27–11.28 for the definition of land under temporary crops.

11.74. Note that area irrigated in Item 0201 refers to the physical area of land irrigated, not the total area of crops irrigated. Thus, land irrigated for successive crops in different seasons within the reference year is only counted once in computing the area of land irrigated, and shown under multiple-irrigated crops. Land under temporary crops with single-irrigated crop refers to land with a single irrigated crop during the reference year, or land with successive crops with irrigation being used for only one of the crops during the reference year.

11.75. Item 0201 is a holding level item. However, for operational reasons, countries may find it easier to collect the data at the parcel level and aggregate up to the holding level. Countries may wish to include this item in the core module if a supplementary irrigation module is not conducted.

0202 AREA IRRIGATED ACCORDING TO METHOD OF IRRIGATION (for the holding)

- *Surface irrigation*
- *Sprinklers*
- *Localized irrigation*

11.76. See paragraphs 11.73–11.74 for more information on land irrigated.

11.77. Surface irrigation refers to a system for partially or completely covering land with water for the purpose of irrigation. There are various types including furrow, border-strip and basin irrigation. Basin irrigation includes submersion irrigation for rice.

11.78. Sprinkler irrigation refers to pipe networks through which water moves under pressure before being delivered to the crop via sprinkler nozzles. The system basically simulates rainfall in that water is applied through overhead spraying. Sprinkler irrigation systems are sometimes known as overhead irrigation systems.

11.79. Localized irrigation is a system where the water is distributed under low pressure through a piped network, in a pre-determined pattern, and applied as a small discharge to each plant. There are several types: drip irrigation (where drip emitters apply water slowly to the soil surface), spray or micro-sprinkler irrigation (where water is sprayed to the soil near individual plants or trees), and bubbler irrigation (where a small stream is applied to flood small basins or the soil adjacent to individual trees). Other terms commonly used to refer to localized irrigation are micro-irrigation, trickle irrigation, daily flow irrigation, drop-irrigation, sip irrigation, and diurnal irrigation.

0203 AREA IRRIGATED FOR EACH CROP TYPE (for the holding)

11.80. Item 0203 refers to the area of crops irrigated, as opposed to the area of land irrigated given in Items 0201 and 0202 (see paragraph 11.74). For example, a plot of 0.4 ha with crops irrigated in two seasons within the reference year is recorded as 0.4 ha of land irrigated in Item 0201, and 0.8 ha of crops irrigated in Item 0203. Analysis of the crop area irrigated in relation to the land irrigated provides information on cropping intensity under irrigation.

11.81. For temporary crops, Item 0203 refers to that portion of the harvested area (see paragraphs 11.99–11.111) irrigated during the reference year. For permanent crops, Item 0203 refers to that portion of the area of permanent crops on the day of enumeration (see paragraph 11.118) irrigated at some time during the reference period. See paragraphs 11.73–11.74 for the definition of irrigation.

0204 SOURCES OF IRRIGATION WATER (for the holding)

- *River/lake/pond (by gravity)*
- *River/lake/pond (pumping)*
- *Dam/reservoir*
- *Deepwell/tubewell*
- *Shallow well*
- *Municipal water supply*
- *Treated waste water*
- *Desalinated water*
- *Other*

11.82. Item 0204 refers to whether irrigation water used on the holding was obtained from the given sources. A holding may obtain water from more than one source. The reference period is the census reference year. See paragraphs 11.73–11.74 for the definition of irrigation.

11.83. Usually, source of irrigation water refers to the original source of the water. Thus, if a canal network is used to distribute water from a dam to farmers, the source of the water is the dam, not the canal. Countries may need to adapt the classes given to meet their needs.

0205 PAYMENT TERMS FOR IRRIGATION WATER (for the holding)

- *Did not pay for water*
- *Paid for water*
 - *Fee per area*
 - *Fee per volume*
 - *Other*

11.84. This item refers to whether payment was made for the irrigation water used on the holding. If payment is made in more than one way – such as both on an area and volume basis – it should be assigned to the “other” category. The reference period is the census reference year. See paragraphs 11.73–11.74 for the definition of irrigation.

0206 OTHER TYPES OF WATER MANAGEMENT PRACTICES (for the holding)

- *Wetland and inland valley bottoms*
- *Flood recession cultivation*
- *Spate irrigation*
- *Other*

11.85. Item 0206 refers to whether specific water management practices, other than irrigation, were used on the holding. See paragraph 11.71 for more on the differences between irrigation and water

management. A holding may have more than one type of water management activity. Data on water management are normally collected in respect of a twelve-month reference period, but data may be distorted by unusual weather conditions in the reference year; for example, if there is no flood recession cultivation because of low flood levels. A longer reference period, such as a three-year period, may be considered for some countries.

11.86. Wetland and inland valley bottoms are lowland areas subject to seasonal flooding, that are used for cropping when covered with water. Water control structures, such as canals, may be constructed to help in the crop cultivation.

11.87. Flood recession refers to areas along the edge of rivers or other water bodies where cultivation occurs, making use of water from receding floods. Floating rice is included as a flood recession crop. Structures may be built to retain the receding water.

11.88. Spate irrigation is a method of random irrigation using the floodwaters of a normally dry water course or riverbed (wadi). Spate irrigation is also referred to as floodwater harvesting. There are two types of spate irrigation. One is where floodwater is harvested in streambeds and spread through the wadi in which the crops are planted. Cross-wadi dams are constructed with stones or earth, often reinforced with gabions. A second type is where floodwater is diverted from the seasonal rivers into adjacent embanked fields for direct application. Here, a stone or concrete structure raises the water level within the wadi to enable it to be diverted.

0207 PRESENCE OF DRAINAGE EQUIPMENT (for the holding)

11.89. For the purpose of the agricultural census, drainage is the artificial removal of excess surface water or groundwater, together with dissolved substances, from the land surface by means of surface or subsurface conduits, to enhance agricultural production. It does not include natural drainage of excess water into lakes, swamps and rivers.

11.90. Presence of drainage equipment means that the equipment is present on the holding at a point of time, such as the day of enumeration. There are different types of drainage facilities. Surface drains divert excess surface water away from an agricultural area to prevent inundation. Subsurface drains allow excess water and dissolved substances to flow through the soil to open wells, moles, pipe drains and/or open drains. On irrigated land, drainage may control salinity or water-logging. Management of water for flood recession cropping is considered water management (Item 0206), not drainage.

Theme 03: Crops

Core items

0011 TYPES OF TEMPORARY CROPS ON THE HOLDING

11.91. Past agricultural census programmes included an item on the area of each temporary crop harvested. In WCA 2010, information on temporary crops for the core module is limited to whether the holding grew each specific type of crop, as provided in Item 0011. This item is useful for sampling frames for census supplementary modules and other crop surveys. It is proposed that area data for temporary crops be collected in the crop supplementary module as Item 0301. Some countries may want to include crop area data in the core census module, especially to provide benchmarks for current crop production statistics.

11.92. Temporary crops are those with a less than one year growing cycle (see paragraphs 11.27–11.28). Some countries may wish to include only the major crops; however, it should be borne in mind that, because it is based on complete enumeration, the core census module may provide the only means of getting reliable data for the minor crops.

11.93. A crop classification is shown in Appendix 3 to help in collecting and tabulating crop data. An

alphabetical list of crop names is also given in Appendix 4. The crop classification is not exhaustive and all crops listed do not apply to any one country. Countries should expand or abridge the crop list, taking into account the importance of specific crops in each country. For a dominant crop, a country may wish to provide further detail, such as by season (for example, summer/winter or wet/dry seasons), land type (for example, lowland/upland), or variety (for example, local/improved). Countries may also wish to disaggregate data by end-use, such as whether it is to be used for food or animal feed. Refer to Appendix 3 for more information on the principles underlying the crop classification and the problems in providing further detail.

11.94. Data on temporary crops are collected in respect of a twelve-month reference period to reflect crops grown in all seasons of the year. The agricultural year is usually the most suitable reference period because enumerators and farmers can usually easily relate to that period in reporting crop data. Crops are normally reported according to the year in which they are harvested (see paragraphs 11.102–11.103). See paragraph 3.35 for more information on how to report crops where land is bought.

0012 TYPES OF PERMANENT CROPS ON THE HOLDING AND WHETHER IN COMPACT PLANTATIONS

11.95. Past agricultural census programmes included data on the area and number of trees for each permanent crop. In WCA 2010, information on permanent crops for the core module is limited to whether each specific type of crop is present on the holding, and which crops are grown in a compact plantation. This is provided in Item 0012. This item is useful for sampling frames for census supplementary modules and other crop surveys. It is proposed that more detailed data on permanent crops be collected in the crop supplementary module as Items 0311–0314. Some countries may wish to include some more detailed data in the core census module.

11.96. Permanent crops are crops with a more than one year growing cycle (see paragraph 11.33). Permanent crops may be grown in a compact plantation or as scattered trees/plants and both should be included. A compact plantation includes plants, trees and shrubs planted in a regular and systematic manner, such as in an orchard. Plants, trees or shrubs forming an irregular pattern but dense enough to be considered as an orchard, are also considered a compact plantation.

11.97. Countries should refer to Appendices 3 and 4 for a list of crops. Countries should expand or abridge the crop list, taking into account their circumstances and data needs (see paragraph 11.93).

11.98. For permanent crops, data are collected in respect of a single point of time, usually the day of enumeration. Thus, a permanent crop is included if it is present on the holding on the day of enumeration.

Supplementary items

0301 AREA OF TEMPORARY CROPS HARVESTED (for each temporary crop type)

11.99. Temporary crops are crops with a less than one-year growing cycle (see paragraphs 11.27–11.28). For help in identifying crops, refer to the crop classification in Appendix 3 and the alphabetical list of crops in Appendix 4. See also paragraphs 11.93. The reference period for data on the area of temporary crops is the census reference year or the agricultural year.

11.100. Area harvested refers to the total area from which the crop is gathered. Thus, area destroyed because of drought, flooding, pest attack or any other reason is excluded. In this regard, a certain percentage loss criterion – for example, yield is less than 20% of what it normally is – is used to determine if a crop is destroyed. Crop that is damaged but not destroyed is included in the area harvested. If possible, the area harvested should exclude uncultivated patches, footpaths, ditches, headlands, shoulders and shelterbelts.

11.101. Area harvested only covers crops grown to maturity. It does not include nurseries, where plant propagation materials are produced for sale or use on the holding (see paragraphs 11.144–11.145). If, for example, rice seedlings are grown for transplanting on the holding, the nursery area of the seedlings is not included in the area harvested, but the harvest from the transplanted seedlings is included. Area harvested includes all crop harvested regardless of its end-use; thus, area harvested includes crop harvested for human consumption, for animal feed, or for any other reason. Crops grown to maturity for harvesting specifically for the production of seed (“seed fields”) should be included.

11.102. Usually, it is easy to assign crops to the reference year. However, a crop may be planted in one agricultural year and harvested in the next agricultural year. Sometimes, the crop season extends over a long period, with the result that part of the crop is harvested in one agricultural year and the rest in the next agricultural year. Problems also occur where the seasons differ in different areas of the country and, for example, a particular seasonal crop grows late in the agricultural year in one area and early in the following agricultural year in another area.

11.103. The recommended approach is to identify crops covered by the census according to whether they are harvested during the reference year, with special exceptions made for end-of year crops. An alternative approach used by some countries is to identify a crop according to the season in which it grows, rather than referring specifically to the agricultural year. Depending on the treatment of end-of-year crops and the timing of the data collection, some crops may not yet be harvested at the time of the census, and data on “expected area harvested” should be reported.

11.104. Temporary crops may be grown more than once on the same land in the same agricultural year. This is known as successive crops. This may involve the same crop or different crops and is important in countries with more than one cropping season. For successive crops, the area should be reported for each crop each time the land is sown during the year. Thus, if a 1 ha field is used for growing rice in the summer and maize in the winter, the crop area data are shown as 1 ha of rice and 1 ha of maize. If two rice crops – a summer crop and a winter crop – are grown on the 1 ha field during the year, the area of rice is shown as 2 ha. Successive crops may be grown by two different holdings and should be counted accordingly.

11.105. Successive crops should be distinguished from successive harvests of the same standing crop, such as for sugar cane or hay, where the area should be counted once only. The same applies where the same crop produces more than one product during the agricultural year, such as cotton producing both fibre and seed. Here, the area harvested should be reported under the principal product.

11.106. A plot or field in which one crop is planted between rows of another crop – for example, sorghum and groundnuts between cotton rows – is referred to as having inter-planted crops. Here, the area of the inter-planted plot or field is assigned to individual crops in proportion to the area occupied by each crop. The sum of the areas of the individual inter-planted crops must be equal to the area of the plot or field.

11.107. The same applies to mixed crops, where more than one (often many) crops are grown unsystematically in a plot or field. Here, it is more difficult to calculate areas and some estimation is needed. This may be based on quantities of seed used for crops in the mixture, plant density in the crop mixture, eye estimates of the proportions of area occupied by the component crops, or the number of plants per area unit. The sum of the areas of the individual mixed crops must be equal to the area of the plot or field.

11.108. Sometimes, countries may wish to report a crop mixture or inter-planting as a single crop unit, rather than as individual crops, because it is an important production system. Sometimes, crops are specifically grown as a mixture, especially grains, and it can be difficult to apportion the area to the individual crops. Countries may treat such cases as a single crop under a suitable crop title, such as “mixed cereals for grain”. It is recommended that, where possible, the area of such crop mixtures should also be sub-divided into their component crops to enable international comparisons to be made. Often, there are standard crop mixtures, which can help in this regard.

11.109. A temporary crop grown in a compact plantation of permanent crops – a so-called associated crop – should be distinguished from a mixed crop. Normally, the area of the temporary crop is estimated by apportioning the land in a suitable manner. See paragraph 11.121 for more information.

11.110. Sometimes, temporary crops are grown scattered around the holding and it is difficult to measure the area. Some estimation is usually possible where the crops are grown in some sort of systematic manner, such as on the bunds of a paddy field. If the crop is not planted systematically or sufficiently densely to permit the area to be measured, the crops are often omitted. Sometimes, countries impose a minimum size criterion for the collection of area data – for example, 100 square metres.

11.111. Normally, an agricultural census collects data on the area of crops harvested, not the area planted. However, it is recognized that some countries may also wish to collect data on area planted to assess crop loss.

0302 AREA OF TEMPORARY CROPS HARVESTED ACCORDING TO END-USE (for each selected crop type)

11.112. End-use is a new concept in WCA 2010, and has been introduced to help assess food supplies and the production of fodder crops.

11.113. End-use refers to what the crop is used for. Crops may be grown for use as food for human consumption, as feed for animals, or for non-food products such as tobacco and flowers. A single crop may have more than one use, such as maize being grown partly for human consumption and partly as a fodder crop. Some countries may be interested in the type of product obtained from a crop, such as whether chillies are harvested for use as fresh or dried produce, or whether cotton is harvested for fibre or seeds. Other countries may wish to identify crops used for industrial purposes. The reference period should be consistent with Item 0301, usually the census reference year.

11.114. Countries should collect end-use data according to national conditions and data requirements, focusing on crops with multiple uses. As a minimum, the following end-use types should be identified:

- *Food for human consumption*
- *Feed for animals*
- *Other uses*

0303 PRODUCTION OF TEMPORARY CROPS HARVESTED (for each selected crop type)

11.115. In the past, agricultural censuses did not normally include a crop production item because it was not considered to be structural data. In the 2010 round of agricultural censuses, it is recommended that production for selected crops be collected in the crop supplementary module. Countries should choose the crops according to their needs. Production data in an agricultural census are useful as benchmarks for current crop production statistics.

11.116. Production refers to the actual quantity of produce, after drying and processing ready for sale or consumption, and after deducting pre-harvest, harvest and post-harvest losses (FAO, 1982, paragraphs 61–68). The reference period should be consistent with Item 0301, usually the census reference year.

0311 AREA OF PRODUCTIVE AND NON-PRODUCTIVE PERMANENT CROPS IN COMPACT PLANTATIONS (for each permanent crop type)

11.117. Permanent crops are crops with a more than one-year growing cycle (see paragraph 11.33). For help in identifying crops, see Appendices 3 and 4. For the definition of a compact plantation, see paragraph 11.96.

11.118. Area of permanent crops refers to the area of the crop at a single point of time, usually the day

of enumeration. Permanent crops should only be included if they are grown for the purpose of producing crops. It does not include nurseries, where plant propagation materials are produced for sale or use on the holding (see paragraphs 11.144–11.145).

11.119. Permanent crops of productive age refer to permanent crops already bearing fruit or otherwise productive. Most tree crops and some other permanent crops become productive after a certain age. Crops at that stage should be enumerated as "of productive age" even if, due to weather or other reasons, they did not yield a harvest in the most recent season. Senile or other trees of productive age, but no longer productive, should not be considered as productive.

11.120. Two or more permanent crops grown together in a compact plantation should be treated in the same way as inter-planted or mixed temporary crops (see paragraphs 11.106–11.108).

11.121. Special procedures are needed to measure area where permanent crops are grown in a compact plantation in association with temporary crops (see also paragraph 11.109). If the density of trees/plants for the permanent crop is not affected by the presence of the temporary crops, the area of permanent crops is normally measured as the whole area of the compact plantation. This is a common situation, especially where temporary crops are grown between the rows of existing trees/plants. Sometimes, this can even be to the benefit of the permanent crop. Thus, for example, a 1 ha compact plantation of coffee grown in association with vegetables would be measured as 1 ha of coffee and, say, 0.5 ha of vegetables. In other words, the total area of the associated crops is greater than the physical area of the piece of land. This is quite different from the treatment of inter-planted or mixed crops (see paragraphs 11.106–11.108). Often, the association of temporary and permanent crops is quite complex, with several permanent and temporary crops growing together in the one compact plantation. Countries will need to develop procedures suitable for national circumstances.

0312 NUMBER OF PERMANENT CROP TREES IN COMPACT PLANTATIONS AND SCATTERED PLANTINGS (for each tree crop)

11.122. Item 0312 refers to the number of trees for scattered permanent crops for tree crops. Tree crops are defined as permanent crops in Group 3, Class 44 or Class 94 of the crop classification (see Appendix 3). Countries may wish to include other permanent crops if suitable. As with all data on permanent crops, the reference period is the day of enumeration. Nurseries are excluded (see paragraphs 11.144–11.145).

11.123. For the definition of permanent crops, see paragraph 11.33. For help in identifying crops, see Appendices 3 and 4. For the definition of a compact plantation, see paragraph 11.96. Scattered plants are those planted in such a manner that it is not possible to estimate the area. Often, they are scattered around the holding.

0313 AREA OF PRODUCTIVE PERMANENT CROPS IN COMPACT PLANTATIONS ACCORDING TO END-USE (for each selected permanent crop type)

11.124. End-use is a new item in WCA 2010. End-use refers to what the crop is used for (see paragraph 11.113). Countries should collect end-use data specific to their national conditions and data requirements, focusing on those crops with multiple uses. As a minimum, the following end-use types should be identified:

- *Food for human consumption*
- *Feed for animals*
- *Other uses*

11.125. For the definition of permanent crops, see paragraph 11.33. For the definition of a compact plantation, see paragraph 11.96. For information on area of permanent crops, see paragraph 11.118. For the definition of productive permanent crops, see paragraph 11.119. The reference period is the day of enumeration.

0314 PRODUCTION OF PERMANENT CROPS (for each selected permanent crop type)

11.126. See paragraph 11.115 for information on production data in the agricultural census. Production refers to the actual quantity of produce, ready for sale or consumption (see paragraph 11.116). The reference period is the census reference year.

0321 AREA OF LAND USED TO GROW TEMPORARY CROPS AS A SECONDARY LAND USE (for the holding)

11.127. Most temporary crops are grown on land classed as having main use “land under temporary crops” in the land use classification (see paragraph 11.27). However, temporary crops can also be grown on other land use types. They may be grown in association with permanent crops on land classed as “land under permanent crops”, or grown on land classed as “forest and other wooded land”. Also, land mainly used for aquaculture may be cropped during part of the year.

11.128. To get a complete picture of temporary crops, it is necessary to find out about land used for growing temporary crops as a secondary land use. For associated crops and crops grown in forest and other wooded land, the proportion of the parcel/field/plot used for temporary crops needs to be estimated – see paragraphs 11.109 and 11.121. Where a piece of land has a primary use which enables it to be cropped for part of the year, such as for aquaculture, the area cropped should be reported.

11.129. This item relates to land as measured in the land use classification; namely, the area on the day of enumeration according to its main use during the census reference year. Secondary land use relates to secondary activities on the land during the census reference year.

0322 USE OF EACH TYPE OF FERTILIZER (for the holding)

- *Fertilizers*
 - *Mineral fertilizers*
 - *Organo-mineral fertilizers*
 - *Organic fertilizers*
 - *Biofertilizers*
- *Other organic materials to enhance plant growth*

11.130. For the purposes of the agricultural census, fertilizers are mineral or organic substances, natural or manufactured, which are applied to soil, irrigation water or a hydroponic medium, to supply plants with nutrients or to enhance plant growth. The term “fertilizer” normally applies to sources of plant nutrients which contain at least 5 percent of a combination of the three primary nutrients (N, P₂O₅ and K₂O). Products with less than 5 percent of combined plant nutrients should be shown under the heading other organic materials to enhance plant growth. A holding may use one or more type of fertilizer.

11.131. Fertilizer usage data usually refer to a twelve-month period, usually the census reference year.

11.132. Mineral fertilizers are fertilizers prepared from inorganic materials manufactured through an industrial process. Manufacturing entails mechanical enrichment, simple crushing, or more elaborate chemical transformation of one or more raw materials. Mineral fertilizers are also known as “chemical fertilizers”, “artificial fertilizers”, and “inorganic fertilizers”.

11.133. Organo-mineral fertilizers are materials obtained through blending or processing organic materials with mineral fertilizers to enhance their nutrient content and fertilizing value.

11.134. Organic fertilizers are fertilizers prepared from processed plant or animal material and/or unprocessed mineral materials (such as lime, rock or phosphate) containing at least 5% of combined plant nutrients. Organic fertilizers include some organic materials of animal origin, such as guano, bone meal, fish meal, leather meal and blood. Other organic materials such as manure, slurry, compost and

sewage sludge contain less than the required nutrient content and should be considered as “other organic materials to enhance plant growth”.

11.135. Biofertilizers are products containing living or dormant micro-organisms, such as bacteria and fungi, that provide nutrients to enhance plant growth.

11.136. Other organic materials to enhance plant growth are any materials other than fertilizers that are applied to the soil to correct low nutrient content or any other problem. This includes manure, slurry, compost and sewage sludge, lime, gypsum, sawdust, crop residue and synthetic soil conditioners. These materials may be of widely varying compositions, including farmyard manure, liquid or semi-liquid manure, straw, compost, green manure and peat. The organic materials may contain fertilizer elements, but they are also applied to improve soil properties, such as soil structure and porosity, water-holding capacity, aeration, and temperature control.

11.137. The term manure is usually used in the sense of farmyard or animal manure, which is a mixture of solid excreta of animals with litter used for their bedding. Slurry is a mixture of liquid and solid animal excreta, with or without dilution with water. Compost consists of organic materials of animal, plant or human origin partially decomposed through fermentation. Sewage sludge is residual organic material derived from sewage. The term green manure describes fresh plant material which is locally produced and is worked into the soil without composting or digestion through animals.

0323 AREA FERTILIZED FOR EACH TYPE OF FERTILIZER AND MAJOR CROP TYPE (for the holding)

11.138. This item refers to the area of crops fertilized, according to the definition of fertilizers in Item 0322. For temporary crops, the area fertilized refers to that part of the area harvested to which fertilizers were applied some time during the census reference year. For permanent crops, the area fertilized refers to that part of the current area of permanent crops fertilized some time during the census reference year. The area of a crop fertilized may be all or part of the total area of the crop. Note that this item relates to the crops fertilized, not the land fertilized; thus, if fertilizer is used on two crops grown successively on the same land in two seasons, the fertilized area should be counted twice. Countries will wish to limit this item to the most important national crops.

0324 SOURCE OF SEED INPUTS FOR EACH MAJOR CROP TYPE (for the holding)

- *Self-production*
- *Exchanges within community*
- *Local market*
- *Seed company*
- *Donation*

11.139. This item refers how seeds were acquired. For the purpose of the agricultural census, seeds refer to any planting material, including seeds themselves, seedlings, cuttings, and small plants or trees. The reference period is the census reference year. There may be one or more sources of seeds for a given crop. Countries should limit this item to the most important national crops.

11.140. Self-production refers to seeds obtained by setting aside a portion of the previous year's crop for use as seed for the current crop. Exchanges within community are seeds obtained through loans, gifts, or other forms of reciprocal assistance, including seed-for-seed exchanges between farmers. Local market refers to the purchase of seed, either for cash or in exchange for other commodities, through markets, itinerant traders or localized trade networks. Seed company refers to seed purchased from a seed producer or supplier through a commercial arrangement. Donation refers to donations of seed from national or international institutions.

0325 TYPE OF SEED FOR EACH MAJOR CROP TYPE (for the holding)

- Certified seed of modern variety
- Uncertified seed of modern variety
- Uncertified seed of farmers' variety
- Other

11.141. This item refers to whether the seed used has been certified according to the national certification system and whether it belongs to a modern or farmer's variety. For more information on seeds, refer to paragraph 11.139. The reference period is the census reference year.

11.142. Certified seeds are those that can be certified as meeting certain national standards as regards their physical and genetic purity. Seed certification systems vary between countries. Some countries have a self-regulatory system in the seed production industry. In other countries, a government regulatory agency is responsible for controlling the seed production process and certifying that seed is of acceptable standard. Usually certified seeds are labelled in some way. For the agricultural census, seeds should be shown as "certified" only if the seed used during the reference year was purchased from the market as certified seed or otherwise received as certified seed. Only newly acquired certified seed should be included; seed collected from a crop that had been planted with certified seeds in a previous year should not be considered as certified.

11.143. Uncertified seed refers to seed that is not certified according to the national standards. These are often provided through the informal sector. Modern varieties are the products of plant breeding in the formal system by professional plant breeders. These varieties are also called "high-yielding varieties" or "high-response varieties". Countries with a system of registration and release of cultivated varieties develop lists or catalogues of released modern varieties, which can be used for the collection of these data in the agricultural census. Farmers' varieties, also known as landraces or traditional varieties, are the product of breeding or selection carried out by farmers, either deliberately or not, continuously over many generations. These varieties are clearly identified by farmers.

0326 AREA OF NURSERIES (for the holding)

11.144. A nursery is an area where young plants, trees or vines are propagated for the purpose of transplanting. Plants in a nursery are not harvested and are therefore not included in the area harvested (temporary crops in Item 0301) or current area (permanent crops in Item 0311). A nursery might be in the open or under protective cover. It may be used for the development of planting materials for the holding itself or for sale. Nurseries do not include seed fields (see paragraph 11.101).

11.145. This item refers to the area of land used for nurseries, not the total area of the nursery crops. Thus, a piece of land used during the year for nurseries for two crops should be counted only once. The reference period is the census reference year.

0327 AREA OF CROPPED LAND UNDER PROTECTIVE COVER (for the holding)

11.146. Cropped land under protective cover is land under permanent structures with a roof of glass, plastic or other material used for protecting crops against the weather, pests or diseases. Such structures may be used for growing temporary or permanent crops. Typical crops grown are vegetables, herbs and flowers. Structures to provide protection against the weather are known as "greenhouses". Temporary devices for short-term protection, such as plastic covering to protect against frosts, should not be included. Netting to protect against insects or other animals should also be excluded. Nurseries should also be excluded.

11.147. The data relate to the presence, on the day of enumeration, of protective structures that were used for growing crops during the census reference year.

Theme 04: Livestock

Core items

0013 NUMBER OF ANIMALS ON THE HOLDING FOR EACH LIVESTOCK TYPE

11.148. The number of livestock is one of the fundamental items in the core module of the agricultural census, and is especially useful as a means of providing sampling frames for livestock surveys.

11.149. Livestock refers to all animals, birds and insects kept or reared in captivity mainly for agricultural purposes. This includes cattle, buffaloes, sheep, goats and pigs, as well as poultry, bees and silkworms. Domestic animals, such as cats and dogs, are excluded unless they are being raised for food or other agricultural purposes.

11.150. This item should cover all livestock of any type being raised on the holding. Reference should be made to the list of livestock types given in Appendix 5. Sometimes, a country may wish to sub-divide an important livestock type by breed or raising method; for example, chickens may be split into local and imported breeds, or sub-divided according to whether they are raised by “free-range” or commercial methods. Some countries may wish to include only the major livestock types in the census core module, but should bear in mind that, because it is based on complete enumeration, the core module may provide the only means to get reliable data on minor livestock types.

11.151. The number of animals is the animal population on the holding at a specific point of time, usually the day of enumeration. The animal population refers to the number of animals being raised by the holding on the reference date, regardless of ownership. Animals raised include those present on the holding, as well as those being grazed on communal grazing land or in transit at the time of enumeration. Bees are counted on the basis of number of hives.

11.152. A holding is raising an animal if it has primary responsibility for looking after the animal on a long-term basis and making day-to-day decisions about its use. Most holders own and raise their own animals, but sometimes they raise animals belonging to someone else under some form of lease agreement. This may involve payment in cash or in other forms such as a share of the livestock produce. A distinction must be made between raising an animal and being employed by an animal owner to look after the animals, where the animal owner is the decision-maker. Often, such arrangements are complex; for example, a person may work as an employee under the condition that any offspring of the livestock being cared for belong to him/her. Here, he/she may be an agricultural holder in respect of some livestock, but working as an employee for other livestock.

Supplementary items

0401 TYPE OF LIVESTOCK PRODUCTION SYSTEM (for the holding)

- *Nomadic or totally pastoral*
- *Semi-nomadic or semi-pastoral*
- *Sedentary pastoral*
- *Ranching*

11.153. The livestock production system refers to the general characteristics and practices of raising livestock on the holding. Four systems are identified:

- Nomadic or totally pastoral refers to livestock raised in a situation where the agricultural holder has no permanent place of residence and does not practise regular cultivation. Livestock move from place to place with the agricultural holder and his/her household, depending on the season and availability of feed or water.
- Semi-nomadic or semi-pastoral refers to livestock raised by holders who live a semi-nomadic life. Typically, the holder has a permanent residence to which he/she returns for several

months of the year according to seasonal factors. Alternatively, the holder establishes a semi-permanent home for several months or years and may cultivate crops as a supplementary food source. Herds are moved with the holder and his/her household.

- Sedentary pastoral refers to livestock raised by holders who have a permanent residence. Often, livestock are raised in combination with growing crops.
- Ranching refers to large-scale livestock activities carried out on large areas of land set aside for extensive grazing.

11.154. Many countries find this topic unnecessary. Nowadays, nomadic and semi-nomadic households are not common and the majority of holdings are sedentary pastoral. Often, ranching is limited to a small number of corporations or government holdings, which may be able to be identified through the sector of the agricultural holding in Item 0002.

11.155. The reference period for the collection of data on type of livestock production system is a single point of time, usually the day of enumeration.

0402 USE OF VETERINARY SERVICES (for the holding)

11.156. Veterinary services cover all professional veterinary services used to protect animal health for the livestock kept on the holding, including treatment of diseases, artificial insemination, vaccination, and surgical procedures. It includes services provided by government organizations, such as through veterinary field workers, as well as by the private sector.

11.157. Data on the use of veterinary services may be collected in two ways. Data for the holding as a whole can be useful as an indicator of whether such services are generally available to the holding. Data for each major livestock type can help in assessing the animal health situation of each livestock type. Countries collect data in the form suited to their needs.

0411 NUMBER OF ANIMALS: AGE AND SEX (for each livestock type)

11.158. Age of livestock data are collected in suitable age groupings, depending on the livestock type and sometimes the breed of the animal. Typical age groupings are:

- Cattle, buffaloes: less than 1 year; 1 year or more to less than 2 years; 2 years or more.
- Sheep, goats, pigs: less than 1 year; 1 year or more.
- Horses, camels, mules/hinnies, asses: less than 1 year; 1 year or more to less than 2 years; 2 years or more to less than 4 years; more than 4 years.
- Poultry: young birds (for example, aged less than three weeks); adult birds.
- Other animals: according to circumstances.

11.159. Countries often collect age and sex data only for the major livestock types. For poultry, it is often not necessary to distinguish between male and female young birds; for example, chickens may be divided into: adult males; adult females; chicks.

11.160. The reference period for the collection of all data on animal numbers is a single point of time, usually the day of enumeration. For more information on the measurement of livestock numbers, see paragraphs 11.149–11.152.

0412 NUMBER OF ANIMALS ACCORDING TO PURPOSE (for each livestock type)

11.161. Purpose refers to the main reason for the animals being kept. This is usually clear-cut, as specific breeds of animal are used for certain purposes. The specific purposes shown will depend on the type of livestock and local conditions. Normally, the following main purposes are identified:

- Cattle, buffaloes: milk; meat; draught power; breeding.
- Sheep, goats: milk; meat; wool; breeding.
- Pigs: meat; breeding.
- Horses, camels, mules/hinnies, asses: milk; meat; draught power; breeding.
- Poultry: meat; eggs; breeding.
- Other animals: according to circumstances.

11.162. The time reference for animal numbers by purpose is the day of enumeration, consistent with Item 0411. To assess the main purpose, reference should be made to the main use of the animals during the census reference year or the intended main use in the future. Countries usually collect data on purpose for the major livestock types only.

0413 NUMBER OF MILKING ANIMALS ACCORDING TO MILK STATUS (for each livestock type raised for milking)

- *In milk*
- *Dry*

11.163. This item relates to the livestock types raised for milking, as identified in Item 0412. For the purposes of the agricultural census, a milking animal is defined as an animal present on the day of enumeration, that has been milked at some time during the census reference year. Milk status refers to whether the milking animal is in milk or dry on the day of enumeration.

0414 NUMBER OF ANIMALS BORN (for each livestock type)

0415 NUMBER OF ANIMALS ACQUIRED (for each livestock type)

0416 NUMBER OF ANIMALS SLAUGHTERED (for each livestock type)

0417 NUMBER OF ANIMALS DISPOSED OF (for each livestock type)

- *Sold or otherwise disposed of for slaughter*
- *Other disposals*

0418 NUMBER OF ANIMALS DIED FROM NATURAL CAUSES (for each livestock type)

11.164. These five items provide information on the population dynamics of livestock herds, such as measures of reproductive rates and take-off rates. Countries should decide on the livestock types to be covered by these data, according to national conditions.

11.165. The five items refer to the number of events (such as births and deaths) during a given reference period. The reference period depends on the type of livestock and operational factors. For cattle, buffaloes and other large animals, a one-year reference period – normally, the census reference year – is usually taken. For smaller animals, such as sheep, goats and pigs, a six-month reference period is often used. For poultry, a one-month reference period is often most suitable.

11.166. Number of animals born refers to births during the reference period to animals that were part of the holding at the time of the birth. Births to animals belonging to another holding should not be included.

11.167. Number of animals acquired refers to purchases or other livestock acquisitions by the holding during the reference period. This includes animals received as gifts or as payment for work.

11.168. Number of animals slaughtered refers to the number of slaughterings during the reference period of animals that were being raised on the holding. This includes slaughterings carried out on the holding, as well as slaughterings carried out by someone else on behalf of the holding. Sales of live animals for slaughtering – for example, to an abattoir – should be shown as disposals under Item 0417. Slaughterings of other people's animals on the holding should not be included.

11.169. Number of animals disposed of refers to sales or other disposals during the reference year of animals being raised on the holding. It includes animals sold, as well as animals given as a gift, for payment for services, or for other reasons. Two types of disposal are shown. Sold or otherwise disposed of for slaughter includes all disposals of animals for the purpose of slaughtering. This is usually in abattoirs, meat packing plants or butchers' shops, but also includes donations of animals for slaughter for festivals and other community events. Slaughterings carried out on a fee basis by, for example, a butcher on behalf of the holding should be included under slaughterings in Item 0416. Other disposals include sales and other disposals that do not involve slaughterings.

11.170. Number of animals died from natural causes refers to deaths from natural causes during the reference year of animals that were being raised on the holding at the time of their death.

0419 TYPES OF FEED (for each livestock type)

- *Primary products*
 - *Produced on the holding*
 - *Purchased*
- *Processed products*

11.171. Countries should decide on the livestock types to be covered by this item, according to national conditions. Type of feed refers to the source of feed for the livestock type for a given reference period, usually the census reference year. More than one type of feed may be used for a specific livestock type during the reference year; for example, animals may be grazed during the summer but need to be hand-fed during the winter.

11.172. Primary products include green fodder such as pasture grasses, forage crops, other crops and tree leaves, as well as harvested by-products and hay. This is sub-divided into whether it was produced on the holding or purchased. Processed products include concentrates and compound feeds.

Theme 05: Agricultural practices

Core items

0006 MAIN PURPOSE OF PRODUCTION OF THE HOLDING

- *Producing mainly for home consumption*
- *Producing mainly for sale*

11.173. The aim of this item is get a broad indicator of the extent to which agricultural holdings are participating in the market economy. Purpose of production data are usually collected only for agricultural holdings in sector "single-holding household" in Item 0002.

11.174. Where a holding sells some produce and uses the rest for home consumption, main purpose should be which of the two – home consumption or sale – represents the larger value of agricultural production. Sale includes selling produce for cash or in exchange for other produce (barter). Disposal of agricultural produce in other ways – for example, for payment of labour, sending to family members, gifts, or payment of taxes – should not be considered in assessing the main purpose of production.

11.175. Data on main purpose of production can be collected for any suitable reference period, such as the main harvest or the census reference year. Several questions may be needed to obtain this item.

Supplementary items

0501 USE OF AGRICULTURAL PESTICIDES (for the holding)

- *Insecticides*
- *Herbicides*
- *Fungicides*
- *Rodenticides*
- *Other pesticides*

11.176. Pesticides are substances intended to prevent, destroy or control in plants or animals diseases and pests, including vectors of human and animal diseases, unwanted species of plants, or to control the behaviour or physiology of pests or crops during production or storage. They include insecticides, herbicides, fungicides, acaricides, termiticides and rodenticides and other substances. The time reference for pesticide data is the census reference year.

11.177. Insecticides are substances used to destroy, control or repel insects. Herbicides are substances used to destroy or inhibit the growth of plants such as weeds. Fungicides are substances that destroy or control the growth of fungi. Acaricides and termiticides are used for the control of mites, ticks and termites. Rodenticides are substances that destroy, kill, repel or control rodents. Other pesticides include substances intended for use as a plant-growth regulator, defoliant, desiccant, fruit thinning agent, or sprouting inhibitor and substances applied to crops either before or after transport.

0502 USE OF GOOD AGRICULTURAL PRACTICES (for the holding)

11.178. The concept of Good Agricultural Practices (GAP) refers to practices adopted by farmers to ensure that agricultural products are safe, of high quality, and produced in an environmentally and socially responsible way. GAP has many components, including practices related to soil and water management, cropping systems, crop protection, livestock rearing, animal health, on-farm processing, working conditions for farm workers, waste management, and landscape and wildlife protection. Some specific GAP related practices are: integrated pest management (IPM); integrated production systems; and conservation agriculture, such as minimum tillage cultivation. GAP related topics are important given the increasing globalization of the food economy and the problems many countries face in meeting the standards required to participate in international markets.

11.179. It is not possible to recommend specific GAP related items for the agricultural census. There is no standard concept of GAP, and practices and standards vary from country to country depending on national conditions and agricultural markets. Some practices are specific to particular crops. In some countries, particular types of GAP practices are promoted. Countries need to determine the types of practices important to their own agricultural production and marketing.

0503 USE OF ORGANIC AGRICULTURAL PRACTICES (for the holding)

11.180. Organic agriculture is an agricultural production system that promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity. Organic agriculture is based on specific standards for achieving socially, ecologically and economically sustainable agro-ecosystems. A key feature of organic agriculture is that chemical fertilizers and pesticides are not used. Other practices such as the use of genetically modified (GM) crops are also proscribed. Terms such as "biological" and "ecological" are sometimes used to describe organic agriculture. Organic agriculture may apply to crops or livestock. Requirements for organically produced foods differ from those for other agricultural products in that production procedures are an intrinsic part

of the identification and labelling of, and claim for, such products.

11.181. For the purposes of the agricultural census, an agricultural production system must satisfy several conditions to be considered organic.

- It must be organic by intent and not by default. Thus, non-sustainable production systems that do not use synthetic inputs are not considered organic.
- The produce must mainly be for sale, not for self-consumption. This is because the market, through pricing mechanisms and certification requirements, provides the best way to assess whether a product is organic.
- The produce must be labelled or otherwise recognized by consumers as organic. Many countries have a national certification system to certify that products have been produced in accordance with organic standards. Non-certified organic food may be sold in farmers' markets or at the farm-gate, where the consumer knows where the produce comes from, and (usually) is prepared to pay a premium price for it because it is recognized as organic.

11.182. Item 0503 relates to whether organic agricultural practices were used on the holding during the census reference year.

0504 USE OF GENETICALLY MODIFIED CROPS ACCORDING TO CROP TYPE (for the holding)

11.183. Item 0504 relates to whether specific types of genetically modified crops were used on the holding during the census reference year. Genetically Modified (GM) crops are living organisms that possess a novel combination of genetic material obtained through the use of modern biotechnology.

0505 SELECTED MACHINERY AND EQUIPMENT USED ON THE HOLDING BY SOURCE (for the holding)

11.184. This item identifies machinery and equipment used on the holding, wholly or partly for agricultural production. The reference period is usually the census reference year. Machinery and equipment used exclusively for purposes other than agricultural production should be excluded. Machinery or equipment owned by the holder, but not used should also be excluded.

11.185. A broad concept of machinery and equipment is used for the agricultural census, covering all machinery, equipment and implements used as inputs to agricultural production. This includes everything from simple hand tools, such as a hoe, to complex machinery such as a combine harvester. However, the main interest centres on farm mechanization. Advanced countries focus on machinery such as tractors, harvesting machines and office equipment. However, less developed countries may be interested in some animal or even hand-powered items of equipment, as well as machinery. Items of machinery and equipment should be clearly described; a seeder, for example could be anything from simple manual seeding device to a complex piece of machinery. To help identify machinery and equipment items for the agricultural census, a classification of machinery/equipment is given in Appendix 6, along with a list of some of the major items under each heading. Countries might like to further sub-divide items – for example, by capacity.

11.186. Source of the machinery/equipment refers to the means by which the holder obtained the right to use the specific item. The following response categories are recommended:

- *Owned solely by the holder or members of the holder's household*
- *Owned by the holding jointly with other holdings*
- *Provided by the landlord*
- *Provided by other private holders (excluding cooperatives)*
- *Provided by a cooperative*
- *Provided by a private agricultural service establishment*
- *Provided by a government agency*

0506 NON-RESIDENTIAL BUILDINGS (for the holding)

11.187. This item identifies non-residential buildings on the holding, used wholly or partly for agricultural purposes. The reference period is usually the census reference year. Non-residential buildings used exclusively for purposes other than agricultural purposes should be excluded. For each type of non-residential building the number, tenure and size should be collected.

Type of non-residential building

- For keeping livestock other than poultry (area)
- For keeping poultry (area)
- For storing agricultural products (area or volume)
- For mixed or other purposes (area)

Tenure of non-residential building

- Owned
- Rented
- Other

0507 PERCENTAGE OF EACH MAJOR AGRICULTURAL PRODUCT SOLD (for the holding)

11.188. This item is important for countries with significant home consumption of agricultural produce. Only the most important staple food crops, such as rice, wheat, maize and cassava, should be included. Percentage should relate to the quantity of production. Usually, this item is collected in ranges such as: 0–19%; 20–49%; 50% or more. Data for this item can be collected for any suitable reference period, such as the main harvest or the census reference year.

Theme 06: Agricultural services**Supplementary items***0601 RECEIPT OF CREDIT FOR AGRICULTURAL PURPOSES (for the holding)**0602 SOURCE OF CREDIT (for the holding)**0603 TYPE OF COLLATERAL FOR CREDIT (for the holding)*

- The holder's land
- Other assets
- Other type of collateral

0604 PERIOD OF LOAN OR CREDIT (for the holding)

11.189. Credit for agricultural purposes refers to any type of credit received for purposes related to the operations of the agricultural holding. This includes credit for purchasing crop and livestock inputs, constructing farm buildings, and purchasing farm machinery. Credit not related to agricultural operations, such as for construction of the holder's house, for other family businesses, or for consumption expenditure, should be excluded.

11.190. Receipt of credit refers to whether credit was made available during the reference year, not whether there was outstanding credit at the time of the census. A holder may have made use of credit on more than one occasion during the year, and therefore more than one source or type of collateral may be reported. Credit received by the holder as well as members of his/her household should be included.

11.191. The term "credit" is used widely to cover borrowing money directly, as well as buying goods and services on credit. Borrowing money may be done through a lending institution, other organizations, or persons for a specific purpose such as buying a tractor. Buying goods and services on credit refers to an

arrangement for buying goods or services where payment is delayed beyond delivery, such as where fertilizer is purchased on the basis that payment will be made after the crop has been harvested.

11.192. In Item 0602, source of credit refers to who provided the credit. The specific source classes will depend on the institutional arrangements for credit in the country. Typical groups are:

- *Commercial bank*
- *Agricultural development bank*
- *Cooperative credit society*
- *Money lender*
- *Input supplier*
- *Self-help group*
- *Family or friends*
- *Government*
- *Other sources*

11.193. In Item 0603, collateral is defined as assets pledged as security for a loan of money, which means that if the borrower defaults on the terms of the loan, the collateral may be sold and the proceeds used to pay off the loan. For the purpose of the agricultural census, collateral is used in a wider sense to also cover guarantee provided for the purchase of goods and services. This is usually related to the production of agricultural goods, but may also be based on assets.

11.194. The collateral for larger holdings is often the holder's land. This is prevalent where there is a well-developed land tenure system with legal ownership of land. Otherwise, other assets may be used as collateral. For a loan to buy farm machinery, for example, the purchased machinery may be used as collateral. Other type of collateral covers the purchase of goods and services on credit based on agreements to pay at a later date, or credit received without any collateral on a personal guarantee basis.

11.195. Period of loan or credit refers to the period over which the loan or credit is to be paid off, as agreed at the time the loan was received. Where credit was received more than once during the reference year, the period should be reported for the loan or credit of highest value. Normally, the period of loan or credit is reported in ranges to reflect the likely reasons for using credit, such as for short-term (for the current crop) or long-term (for major capital outlays). Typical groupings are:

- *Less than 12 months*
- *12–35 months*
- *36 months or more*

0605 SOURCES OF AGRICULTURAL INFORMATION (for the holding)

- *Extension services*
- *Radio*
- *Television*
- *Newspapers*
- *Agricultural newspapers*
- *Input agencies*
- *Internet*
- *Other farmers*
- *Other*

11.196. Sources of agricultural information refer to where the holder received information to help manage the agricultural holding. This includes information on weather, selection of crop varieties, new agricultural practices, farm machinery, credit facilities, plant diseases and pests, marketing, and commodities or crop varieties being promoted by the Government. The reference period is the census reference year.

11.197. Most farmers use various sources of information. Usually, countries prefer to collect data on all the sources. Extension services refer to advice received through government or non-government

extension services, and is covered in more detail in Item 0606.

0606 SOURCES OF AGRICULTURAL EXTENSION SERVICES (for the holding)

11.198. Agricultural extension refers to the provision of agricultural advice and information to crop and livestock producers. Extension services may be provided by government institutions, non-government organizations, farmer organizations, educational institutions, informal grass-roots organizations, and others. Extension services may cover advice to farmers in areas such as farm management, selection of crop varieties, use of inputs such as fertilizers, credit, farm mechanization, animal health, plant protection, sustainable development, and marketing. Extension services may also be used by Governments to distribute inputs, disseminate market information, and promote the production of particular commodities or crop varieties.

11.199. In most countries, government is the principal provider of extension services through its network of agricultural field staff. The organization of government extension services varies from country to country. Sometimes, extension services are centralized in a single ministry with all-round extension officers providing advice in all disciplines. In other countries, there are specialized extension services in crops, livestock and perhaps other fields.

11.200. There are many different methods of implementing extension services. Often, extension workers visit farmers to provide on-the-spot advice. Demonstrations of new farming practices or technologies are sometimes arranged for small groups of farmers, or more formal training programmes organized for larger groups of farmers. Sometimes, study tours are arranged for farmers to observe agricultural practices in other places. Usually, agricultural extension is free of cost to the farmer; sometimes, it is not.

11.201. Item 0606 refers to the use of agricultural extension services by the holding during the census reference year. It refers to personal contact with extension personnel or direct participation in extension activities such as a farm demonstration. It does not include accessing extension material through printed brochures, radio, television or the Internet. Also, extension services should be limited to formal contacts with extension workers specifically employed for that task; advice received from other informal sources should not be included. A farmer may have received extension services from more than one source.

11.202. The categories for sources of agricultural extension will depend on the way extension services are organized in the country. Countries may want to identify the discipline (such as crops or livestock) and the type of organization providing the service (such as government institution or farmer organization). Typical source categories are:

- *Government organization*
 - *Crops*
 - *Livestock*
- *Farmer association*
- *Other*

0607 TRAVELLING TIME TO NEAREST PERIODIC OR PERMANENT AGRICULTURAL PRODUCE MARKET (for the holding)

11.203. This item is included to help assess how easy it is for farmers to access markets. Travelling time is usually expressed in ranges, such as:

- *Less than 30 minutes*
- *30–60 minutes*
- *60–120 minutes*
- *More than 2 hours*

11.204. Sometimes, travelling times vary according to, for example, the wet and dry seasons. Some countries may wish to collect these data for different seasons.

11.205. Periodic or permanent agricultural produce market refers to a market where farmers can bring their produce for sale. The markets operated every day or on certain days of the week.

Theme 07: Demographic and social characteristics

Core items

0005 HOUSEHOLD SIZE

11.206. Household size is the number of members of the holder's household. This can be obtained either by listing all household members or asking a direct question on the number of household members. A household is one or more persons living together who make common provision for food or other essentials for living (see paragraph 3.26).

11.207. It is recommended that household data only be collected for agricultural holdings in sector "single-holding household" in Item 0002. It would be difficult to interpret household data for other types of holdings and could lead to double counting of household members. Household data are not normally provided for other types of holdings in the household sector in Item 0002. Some countries collect household data for "multiple-holding households" in Item 0002 by referring to the group of persons within the household operating the holding.

11.208. Household size can be measured in two ways: (i) persons present on the day of enumeration; or (ii) persons who are usually resident in the household. The usual residence approach – called the *de jure* concept – is recommended for the agricultural census, and is the way official population estimates are normally made. Usually, it is not difficult to identify a person's place of usual residence. However, sometimes members of a family are studying or working away from the family home and return home regularly. The treatment of such cases should be clearly stipulated.

11.209. With a *de jure* concept, the data on household size relates to persons who, at the time of the census, are usually resident in the household.

Supplementary items

0701 WHETHER HOLDING IS PART OF AN AGRICULTURAL HOUSEHOLD (for the holding)

11.210. An agricultural census covers all units engaged in agricultural production activities, regardless of size or importance. For some households, agricultural production on the holding is the household's only or predominant activity, but for other households, it may only provide a secondary source of income. A household may be engaged in other economic production activities (see Item 0016) or its members may work in paid jobs. A household with a small holding of, for example, only 0.4 ha of land may or may not be food secure, depending on the extent to which it relies on the agricultural holding for its livelihood.

11.211. Item 0701 is recommended for inclusion as a supplementary item to identify what might be termed "genuine farmers". This can provide an important classification item for the census tabulation. It can also be useful for sampling frame purposes. Item 0701 relates only to holdings in sector "single-holding household" in Item 0002.

11.212. A household containing an agricultural holding may have four sources of income: (i) agricultural production income; (ii) income derived from economic production activities other than agricultural production; (iii) income from paid employment; and (iv) pensions, investment income and remittances. An agricultural household is a household for which agricultural production income is the largest of these four income sources. Agricultural production income includes income from growing crops and raising livestock; it excludes income from a paid agricultural job. Income includes income in cash and in kind. For more information on the concept of agricultural household, see *Handbook on Statistics on Rural Development and Agricultural Household Income* (UN et al, 2005, Chapter IX).

11.213. Note that there are various types of non-agricultural households. For some, agricultural

production is a sideline activity to the household's main economic production activity or employment. For others, the household is forced to rely on other sources of income because income from agricultural production is low. The latter may be of particular concern to agricultural policy-makers, and countries may wish to draw out this distinction in the analysis.

11.214. It is not necessary to collect detailed income data to determine whether the holding is part of an agricultural household. Income data are difficult to collect, even in an in-depth sample survey, and is not normally feasible in an agricultural census. Instead, respondents should be asked to provide an overall assessment of their agricultural production activities in relation to the three other sources of income. The important thing is not to get quantitative measures of income from the different sources, but to distinguish between agricultural and non-agricultural households. Normally, the reference period for the collection of agricultural household data is the census reference year.

0702 NATIONAL/ETHNIC GROUP OF HOUSEHOLD HEAD OR AGRICULTURAL HOLDER (for the holding)

11.215. In many countries, there are major differences in agricultural practices between different national or ethnic groups, which are important to measure in an agricultural census. For the agricultural census analysis, a single national/ethnic group indicator for the holding is needed, and this is usually done by referring to the household head or the agricultural holder. This may not always be appropriate.

11.216. The national/ethnic groups used by a country could be based on nationality, religion, language or customs, depending on their importance in the community and their dissimilar agricultural characteristics. There should also be consistency with the population census and other statistics.

0711 SEX (for each household member)

- Male
- Female

0712 AGE (for each household member)

11.217. Age refers to the age in completed years at the time of the census. Data on age may be collected by asking directly for the age or by obtaining the person's date of birth. Age is sometimes difficult to collect. In some countries, people have different ways of calculating age, such as age next birthday. There is also a tendency for people to round ages to the nearest five or ten years. Date of birth can also be difficult to collect. Often, it is known only according to an alternative calendar such as a lunar calendar. Sometimes, people can only identify their date of birth in relation to major events, or may only know the season not the date. There are various data collection tools available to help overcome these problems.

0713 RELATIONSHIP TO HOUSEHOLD HEAD OR OTHER REFERENCE PERSON (for each household member)

11.218. Relationship data are collected by first identifying the household head (or any other reference person) and then recording the relationship of each other household member to that person. In the agricultural census, relationship data are only collected to determine household and family composition. Therefore, it doesn't matter who the reference person is or, if it is the household head, whether that title reflects the person's role. Countries may use any reference person considered most appropriate to national circumstances. It is not intended that household head data – for example, by gender – will be analysed in the agricultural census. Instead, census data will be analysed in relation to different household composition types, such as a married couple with children or an extended household.

11.219. The relationship categories should be based on international standards used in the population census programme (UN, 1998, paragraph 2.73), ensuring consistency with other national statistics. The recommended categories are given below. Some countries may wish to identify more complex relationship structures, such as child/parent relationships for different family units within a household.

- *Head*
- *Spouse*
- *Child*
- *Spouse of child*
- *Grandchild or great grandchild*
- *Parent or parent of spouse*
- *Other relative*
- *Other unrelated person*

11.220. Households should be divided into household composition types based on the family nucleus. The following groupings used in the population census (UN, 1998, paragraph 2.82) are usually suitable:

- *One-person household*
- *Nuclear household*
 - *Married couple family with children*
 - *Married couple family without children*
 - *Father with children*
 - *Mother with children*
- *Extended household*
- *Composite household*

0714 MARITAL STATUS (for each household member)

11.221. Marital status is the status of the household member in relation to the marriage laws or customs of the country. The marital status categories should be based on international standards used in the population census programme (UN, 1998, paragraph 2.96), ensuring consistency with other national statistics. The following groupings are recommended:

- *Never married*
- *Married*
- *Widowed and not remarried*
- *Divorced and not remarried*
- *Married but separated*

11.222. Countries may wish to take local conditions into account in determining the marital status categories. In some countries, the category “consensual union” may be needed to reflect unions outside marriage laws or customs. Other countries may need to take into account concubinage, polygamous or polyandrous practices.

11.223. Marital status is sometimes collected for all persons, regardless of age, but often it is restricted to those above the minimum legal marriage age. Whichever approach is taken, countries should show marital status data in the census tables for persons aged 15 years and over, to provide international comparisons.

0715 EDUCATIONAL ATTAINMENT (for each household member)

11.224. Educational attainment data are useful in an agricultural census to examine the effects of education on characteristics such as cropping systems, agricultural practices and household food security. Educational attainment refers to the highest grade of formal education completed or attended by a person. In the agricultural census, educational attainment data should be collected for both the agricultural holder and the agricultural holder’s spouse, if present, as the educational levels of both can be important factors in agricultural and household activities.

11.225. Data on educational attainment needs to be recorded in suitable categories. Attention should be paid to consistency with other national statistical collections, especially the population census, and to the International Standard Classification of Education (ISCED) (UNESCO, 1997). For international comparison purposes, educational attainment should be classified into at least three levels of education: primary, secondary, and post-secondary. Each level may be further sub-divided to meet national needs.

Theme 08: Farm labour

Basic concepts in labour statistics

11.226. Theme 08 covers items related to the two types of labour inputs on agricultural holdings: (i) labour provided by household or family members, and (ii) paid outside workers.

11.227. Data on farm labour in the agricultural census should be based on the recommendations on labour statistics provided by ILO (ILO, 2000). Under ILO guidelines, the concept of activity status, broadly speaking, is used to measure whether a person of working age is part of the supply of labour for the production of economic goods and services. A person who is part of the supply of labour is said to be economically active, whereas a person who is not part of the supply of labour is said to be not economically active.

11.228. For the purposes of defining activity status, economic goods and services are defined according to SNA principles and covers the production of goods and services for sale or for home consumption (UN et al, 1993). For agricultural work, it covers all crop and livestock production and related activities, including supplying water, post-harvest activities, and preparation of food for employees on the holding. It does not include domestic and personal services provided for the household's own consumption.

11.229. There are two main ways to measure a person's activity status. One is the concept of "currently active", which measures activity status in relation to a short reference period such as a week. The other is the concept of "usually active", which measures a person's main activity status over a long reference period such as a year. One of the advantages of the "currently active" concept is that data collection is easier because it only requires activity information for a short reference period. "Current activity" is usually preferred for making international comparisons. However, "usual activity" is generally used in the agricultural census because it is more suited to measuring the seasonal aspects of agricultural work and because the emphasis in the census is on the source of labour inputs rather than measuring employment as such. The "usually active" concept is recommended for use in the agricultural census.

11.230. A person is determined to be usually economically active or not usually economically active according to the person's main or usual activity during a long specified period such as a year. Criteria need to be set for this purpose, based on the number of months, weeks or days of activity during the long reference period. For example, a person would be classified as usually economically active if their total period of employment and unemployment was 50 percent or more of the length of the long reference period (that is 26 weeks or more for a reference year). A person would be classified as not usually economically active if their total period of employment and unemployment was less than half the reference period. In order to capture agricultural labour input completely, the agricultural season could be used for the long reference period, instead of the reference year. However for assessing employment statistics in general, it is the reference year that is mostly used. Within the category usually economically active, persons may be usually employed if the period of employment during the reference period exceeded that of unemployment, otherwise they would be usually unemployed. Employed persons work in one or more jobs, and employment data – such as status in employment, occupation, and time worked – are obtained about each job. For the census of agriculture, employment data should focus on those jobs that are related to agriculture, separately identifying main jobs and secondary jobs.

11.231. The minimum age limit for economically active persons should be set in accordance with national conditions, but should not be higher than 15 years. A lower minimum age limit may be appropriate in developing countries where children often participate in agricultural work. To facilitate international comparisons, tabulations should distinguish between persons aged under 15 years and those aged 15 years and above. Where countries set the minimum age limit below ten years, tabulations should also distinguish children aged under ten years. It is not normal to apply a maximum age limit as elderly persons can still make a contribution to agricultural work.

11.232. As for all items in the agricultural census, countries need to carefully design questionnaires for the collection of farm labour data, suitable to national circumstances. Activity status data can only be collected by asking each person a series of specific questions about his/her work activities or, if he/she

is not working, about his/her availability for, and steps taken to find, work. Accurately measuring usual activities over a twelve-month reference period is difficult and special data collection measures are needed to ensure that reporting is complete and accurate. Efforts must also go into ensuring that data are not biased as a result of enumerators misunderstanding the concept of activity status, especially for women and other family members contributing labour to work on the holding.

11.233. An additional point to bear in mind is that a person who is usually employed over the reference period (year) may not necessarily be always employed in agricultural work. It may be useful, therefore, to identify agricultural labour separately from non-agricultural labour and/or to ask specific questions about any job during the agricultural season that is related to agriculture (including jobs that are not the main job). More detail on international standards for labour statistics is contained in various ILO publications (ILO, 1990; ILO, 2000). Countries should refer to this material to clarify the treatment of special cases.

Supplementary items

0801 ACTIVITY STATUS (for each household member of working age)

- *Economically active*
 - *Employed*
 - *Unemployed*
- *Not economically active*

11.234. Activity status refers to whether a person is usually economically active or usually not economically active (see paragraph 11.230; ILO, 2000, pp. 24–28).

11.235. An employed person is one whose main activity during the reference year was to be in paid employment or self-employment. Paid employment includes those at work, as well as those with a job but temporarily not at work because of illness or holiday, but retaining a formal attachment to that job. Formal job attachment needs to be determined according to national circumstances, taking into account the continued receipt of wages and the guarantee of a return to the job. Self-employment includes those operating a business or otherwise working for profit or family gain, including contributing family workers (see paragraph 11.244).

11.236. The family is often an important source of labour on agricultural holdings and should be given special attention in measuring the activity status of household members. Special care is needed with homemakers. Activities related to care of the home or children do not constitute employment in a statistical sense, but many homemakers also do some work on the holding, especially in peak periods such as during crop planting or harvesting. Many homemakers also have other specific tasks on the holding, such as looking after the kitchen garden or caring for livestock. In measuring activity status, some countries set a minimum requirement for the amount of time worked; in doing this, countries should ensure that the contribution of unpaid family workers, especially women, are fully reflected.

11.237. An unemployed person is one whose main activity during the reference year satisfies the following three criteria:

- without work, that is he/she is not employed;
- currently available for work, that is he/she would be willing to do work if work was available; and
- seeking work, that is he/she is taking specific steps to find work.

11.238. Criteria for determining “available for work” and “seeking work” must be established based on national circumstances, taking into consideration how the labour market is organized and how people find jobs. Persons not seeking work because of temporary illness, previous arrangements to start a new job in the future, or on temporary or indefinite lay-off without pay, are included as unemployed.

11.239. The unemployment concept is difficult to apply in countries where the labour market is not well organized or where self-employment or informal labour arrangements are predominant. This commonly

applies in rural areas of developing countries. Often, the “seeking work” criterion is relaxed because many people do not seek work because they believe that no jobs are available.

11.240. A person is not economically active if his/her main activity status during the reference year was neither employed nor unemployed. Typical examples are: persons below the minimum age for measuring economic activity; homemakers; students; persons too old or too sick to work; and persons living from the proceeds of property, investments, interest, rent, royalties or pensions.

0811 STATUS IN EMPLOYMENT OF MAIN JOB (for each economically active household member)

- *Employee*
- *Own-account worker*
- *Contributing family worker*
- *Member of producers' cooperative*
- *Not classifiable*

11.241. Status in employment refers to status of an economically active person with respect to the type of employment contract the person has with his/her job (ILO, 2000, pp. 20–23). Note that activity status relates to whether the person was mainly employed, unemployed or not economically active during the reference year, while status in employment refers to the characteristics of a particular job – in this case the person's the main job – or (for the unemployed) the status in work of the person's last job.

11.242. An employee is a person in a paid employment job (see paragraph 11.235). Paid employment jobs are those which provide remuneration not directly dependent on the revenue of the unit for which the person works. Typically, an employee receives wages and salaries for the time worked. However, remuneration may also be in the form of in-kind payments such as food, or on a commission or piece-rate basis.

11.243. An own-account worker is one who is working on his/her own account, or with one or more partners, in a self-employment job (see paragraph 11.235), where that person has overall responsibility for the management of the producing unit. In a self-employment job, the remuneration is directly dependent on the profits derived from the goods and services produced. Agricultural holders are own-account workers if their main job is work on the holding.

11.244. Contributing family workers are those who are working in a self-employment job in an establishment operated by a person living in the same household, and whose level of responsibility or commitment in terms of working time or other factors is not sufficient to be considered an own-account worker. Thus, the agricultural holder is the own-account worker and any other household member whose main job is working on the holding is a contributing family worker. Where it is customary for people to work without pay in a business operated by a related person not living in the same household, the requirement of living in the same household is often relaxed.

11.245. A member of a producers' cooperative is one working in a self-employment job as a member of a cooperative, where each member takes part in managing the cooperative on an equal footing with other members.

11.246. Not classifiable covers those such as the unemployed who cannot be classified to any of the previous categories.

0812 OCCUPATION OF MAIN JOB (for each economically active household member)

11.247. Occupation is defined as the main tasks and duties carried out by an employed person in a particular job (ILO, 1990, pp. 2–5). Occupation relates to a particular job; a person may have more than one job, each with its own occupation. For the agricultural census, occupation data are usually collected in respect of the main job. The occupation of an unemployed person relates to the work done in a previous job. Occupation is not relevant if the person is not economically active.

11.248. Occupation should not be confused with industry: occupation is the type of work done by the person, while industry is the activity of the establishment in which the person works. Thus, a person working as a machine operator for a logging firm would have occupation "machine operator" and industry "forestry". Also, occupation should not be confused with status in employment, which describes whether a person is an employee, own-account worker, etc. (see paragraphs 11.241–11.246).

11.249. Occupation should be coded according to a standard national occupation classification, which should be compatible with the International Standard Classification of Occupations (ISCO) (ILO, 1990). Most occupation classifications provide different levels of coding and the agricultural census should be coded at the lowest possible level consistent with the information provided in the questionnaire and the level at which data are to be presented in the census tabulations. Usually, occupation is coded to at least the second or third levels, corresponding to the ISCO sub-major or minor groups.

11.250. ISCO provides the following ten major groups:

1. *Legislators, senior officials and managers*
2. *Professionals*
3. *Technicians and associate professionals*
4. *Clerks*
5. *Service workers and shop and market sales workers*
6. *Skilled agricultural and fishery workers*
7. *Craft and related trade workers*
8. *Plant and machinery operators and assemblers*
9. *Elementary occupations*
10. *Armed forces*

11.251. Agriculture related occupations are mainly in major groups 1, 2, 3, 6, 8 and 9, but most persons in rural areas report occupations belonging to groups 6 and 9. ISCO emphasizes the skill level required to do a particular task and a distinction is made between skilled agricultural workers (Group 6) and farm-hands/labourers, which are classified under elementary occupations (Group 9).

- Skilled agricultural workers are those whose "tasks require the knowledge and experience necessary to produce farm products" (ILO 1990, p. 6 and pp. 157–171).
- Persons with elementary occupations are those whose "occupations require the limited knowledge and experience necessary to perform mostly simple and routine tasks, involving the use of hand-held tools and in some cases considerable physical effort and with few exceptions only limited personal initiative or judgement. Tasks include: digging and shovelling; loading and unloading; raking, pitching and stocking hay; watering and weeding; picking fruit and other crops; feeding, watering and cleaning animals; etc." (ILO 1990, p. 7 and p. 258).

11.252. It can be difficult to distinguish these two occupation groups. Countries need to develop criteria suited to national conditions to determine what types of agricultural workers are deemed to have the skills necessary to be classified in Group 6. Also to be considered are the questions needed to provide the information necessary to code on the required basis. Just asking a single question about occupation is often not satisfactory because of confusion between occupation and industry or status in employment, and it usually does not give the information needed to make a clear distinction between skilled and unskilled workers. Some countries ask two occupation related questions – the first about the kind of work done, and the second about the main tasks and duties – which provides a better basis for coding a person's occupation. Some countries define the holder as a skilled worker and all other persons working on the holding as unskilled; this is not completely satisfactory.

0813 TIME WORKED IN MAIN JOB (for each economically active household member)

0814 TIME WORKED ON THE HOLDING (for each economically active household member)

11.253. Past agricultural census programmes have used the concept of permanent/occasional worker to measure the volume of labour inputs to the holding. A permanent worker was someone whose services are used regularly and continuously during the reference year. Often, this was interpreted as working six

months or more during the year. This was difficult to apply, given the seasonality of agricultural work. A person may work regularly and continuously on a holding when work is available, but that may only be for a few months of the year. Alternatively, a person may work continuously but only for a few hours a week.

11.254. It is recommended that a different approach be used for the 2010 round of agricultural censuses, based on the concept of time worked (ILO, 2000, pp. 39–40). Time worked is the time spent working in a particular job during the twelve-month reference period. Time worked includes regular working hours as well as overtime, time spent waiting or standing by, and other short breaks. It excludes meal breaks and absences because of holidays or sickness. Two time worked items are recommended: time worked in main job, and time worked on the holding.

11.255. Time worked has two elements. Full-year/part-year work measures the number of months or weeks of work carried out during the year. Full-time/part-time work measures the number of hours worked per day or week, as assessed against some sort of norm such as a 40-hour week.

11.256. Countries should give careful consideration to the application of the time worked concept, taking into account national circumstances and the way in which the time worked data are to be presented in the census tabulations. One option is to present data according to specified weeks per year and hours per day groupings. Another option is to summarize time worked according to the following categories:

- *Full-time job*
 - *Worked 1–3 months in the year*
 - *Worked 4–6 months in the year*
 - *Worked 7 or more months in the year*
- *Part-time job*
 - *Worked 1–3 months in the year*
 - *Worked 4–6 months in the year*
 - *Worked 7 or more months in the year*

11.257. Comparability with previous agricultural censuses could be achieved by defining permanent/occasional workers in terms of the above classes; for example, a permanent worker could be one working for seven or more months of the year in a full- or part-time job.

11.258. Much effort needs to go into designing suitable questionnaires and data collection procedures for time worked data. At a minimum, it will be necessary to ask each person about the months per year and hours per week worked for each job. However, these questions alone will not usually be sufficient to get reliable data, especially given the complex organization of farm labour in many countries. One option is to ask detailed questions about the nature and duration of all activities carried out by each person during the year. Diaries could be used for this purpose. Such in-depth questions would improve data quality but would add to the length of the questionnaire. However, this is the rationale for the current modular approach, with in-depth data such as this being collected in a sample-based supplementary module rather than by complete enumeration in the core module.

0821 NUMBER OF EMPLOYEES ON THE HOLDING: TIME WORKED AND SEX (for the holding)

- *Male employees*
- *Female employees*

11.259. Items 0801–0814 are about the economic activity of the holding's household members and the labour they supply to the holding. The current item, Item 0821, is about the use of paid workers on the holding. The underlying concepts for these data are based on the ILO recommendations on labour statistics (see paragraphs 11.226–11.232).

11.260. An employee on the holding is a person who had a job on the holding at some time during the reference year, whose status in employment for that job was "employee" (see paragraph 11.242); that is, he/she worked on the holding at some time during the year in a paid employment job. This includes permanent employees, as well as seasonal, part-time and casual workers. Employees are usually paid

in cash, or in the form of food or other farm produce, but there may be other remuneration arrangements. Exchange of labour should be treated as a form of paid employment. Persons employed by the household but not working on the holding are excluded. Family members are excluded from Item 0821 because their labour inputs are covered under Items 0801–0814. The term “employee on the holding” is equivalent to the term “agricultural worker other than members of the holder’s household” used in previous agricultural census programmes.

11.261. A distinction is made between hiring an employee to work on the holding for a defined remuneration, and engaging a contractor to provide certain agricultural services for an agreed fee. Item 0821 covers only employees. Contract work is covered in Item 0823. For more information on the difference between employees and contractors, see paragraph 11.267.

11.262. The number of employees on the holding is a count of the number of persons who were an employee on the holding at some time during the reference year. Thus, a person who worked on the holding several times during the reference year is counted only once.

11.263. For the 2010 round of agricultural censuses, the concept of time worked is used to replace the permanent/occasional concept used in previous agricultural census programmes. See paragraphs 11.253–11.258 for more information. Time worked data for employees should be consistent with the same data for household members. In this regard, the time worked classification in paragraph 11.256 should be suitable. Comparability with previous agricultural censuses can be achieved by defining permanent/occasional workers in terms of the given time worked classes.

11.264. As for all time worked data, care is needed in designing suitable questionnaires and data collection procedures (see paragraph 11.258).

0822 FORM OF PAYMENT FOR EMPLOYEES (for the holding)

11.265. Item 0822 is important in countries where there are various forms of remuneration for employment of labour. It refers to the form or forms of payment used on the holding during the reference year. The form of payment for each employee is usually not reported. The payment methods can vary from country to country and each country needs to determine categories suitable to national conditions. Typical form of payment groups are:

- *With money*
- *With farm produce*
- *Exchange of labour*
- *Other forms of in-kind payment*

0823 USE OF CONTRACTORS FOR WORK ON THE HOLDING ACCORDING TO TYPE (for the holding)

11.266. This item is about whether agricultural service contractors were used for work on the holding during the census reference year.

11.267. Using an agricultural service contractor must be distinguished from hiring an employee to work on the holding, which is covered in Item 0821. An employee is a person employed under an explicit or implicit agreement that provides the person with a certain agreed remuneration. Often, there are legal requirements attached to hiring an employee such as the provision of social benefits to the employee (such as sick leave), payment of taxes (such as payroll tax), and responsibility for work safety (such as insurance for workplace accidents). A contractor, on the other hand, is an own-account worker (see paragraph 11.243), who normally receives no social benefits as part of the work carried out. Often, there are legal requirements for a contractor, such as having the required business licence or payment of value added taxes. Sometimes, it can be difficult to differentiate between an employee and a contractor.

11.268. The type of contractor groupings used depends on national conditions. Typically, specialized work

on the holding is contracted out, such as crop protection, tree pruning, crop harvesting, sheep shearing, or farm administration.

Theme 09: Household food security

Basic household food security concepts

11.269. Household food security refers to the situation where all members of a household at all times are consuming enough safe and nutritious food for normal growth and development, and for an active and healthy life. A household is food insecure if it is not able to afford to buy enough food or is limited in food supply and therefore may not be able to eat safe or nutritionally adequate food. Food security refers to conditions related to a household not producing enough food and not having enough resources to buy food; it does not refer to other causes of hunger such as dieting or physical inability to cook/buy food.

11.270. Household food security is a complex, multi-dimensional problem. Concepts such as food security, food insecurity, hunger and vulnerability are difficult to measure. Household food security may incorporate elements such as food shortages, fear of food shortages, perceptions about the quality or quantity of food eaten, and how people deal with food shortages. The nutritional quality of diets and safety of food are other elements. Access to health, sanitation, and other services also affect a household's food security situation (FAO, 2000).

11.271. Various approaches have been used to measure household food security. Some countries have developed a household food security scale, which provides an overall assessment of where each household is on the spectrum between being food insecure and food secure, based on a series of food security related questions. Other countries undertake in-depth surveys exploring all the different elements of household food security.

11.272. It is not possible to fully cover household food security in an agricultural census, and it is difficult to make specific recommendations on which household food security items each country should include in its agricultural census. Some guidelines are provided in the paragraphs below.

11.273. Any survey involving a complex topic such as this will need extensive questionnaire development and testing. The concept of "food shortage" could be approached in different ways, such as asking about "getting enough food every day", "facing food shortages", or "not having enough money to buy food". Food shortages may be reflected in various ways such as skipping meals, eating less expensive food, or cutting the size of meals.

11.274. It is recommended that food security not be included in the core agricultural census module. For the household food security supplementary module, two broad food security indicators are proposed: (i) food shortages faced in a twelve month reference period; and (ii) fear of a food shortage in the coming twelve months. Additional items on the types of food normally eaten, anthropometric data, and the effects of natural disasters are also proposed.

Supplementary items

0901(a) WHETHER HOUSEHOLD MEMBERS COULD NOT AFFORD TO EAT WHAT THEY NORMALLY EAT AT ANY TIME DURING A TWELVE-MONTH REFERENCE PERIOD (for the household)

0901(b) MONTHS IN WHICH FOOD SHORTAGE OCCURRED (for the household)

0901(c) REASONS FOR FOOD SHORTAGE (for the household)

0901(d) HOW THE HOUSEHOLD'S EATING PATTERNS WERE AFFECTED BY FOOD SHORTAGE (for the household)

0901(e) STEPS TAKEN TO ALLEVIATE FOOD SHORTAGE (for the household)

11.275. Item 0901 relates to food shortages faced by the household during a previous twelve-month

reference period. This takes account of seasonality in food supplies. The census reference year is usually suitable. If seasonality is not important, a shorter reference period, such as one month, may be used.

11.276. Could not afford to eat what they normally eat refers to the situation where the household finds that it is unable to maintain its normal eating patterns at any time during the reference period and is forced to make changes such as skipping meals, eating less for each meal, or eating cheaper and perhaps less nutritious food. This item relates to what the household normally eats, even if the household's normal diet is inadequate in terms of the amount of food eaten or how balanced the diet is.

11.277. Data on months in which food shortage occurred are useful to assess the seasonality of food shortages, such as before the main harvest or where natural calamities are common. A household may experience a food shortage in one or more months of the year and respondents should show each month in which the shortage occurred. For some countries, this information could be collected in terms of the frequency of food shortages, rather than months in which food was short. Here, terminology such as: "1 or 2 months of the year" and "some months of the year", or "sometimes" and "often" may be used.

11.278. Reasons for food shortage will depend on local conditions. Food shortages may be caused by exceptional events such as loss of crops, or they may be attributed to more long-term factors such as lack of land. Respondents may have more than one reason for a food shortage. Countries should develop suitable response categories for reporting these data. Some typical response categories are:

- *Loss of crops*
- *Lack of jobs*
- *Inability to work because of illness or injury*
- *Disabled, old age*
- *Lack of land*
- *Lack of capital*
- *Family too big*

11.279. Eating patterns affected by food shortage refers to the household's immediate response to the food shortage. Typical response categories are:

- *Skipping meals*
- *Eating less expensive food*
- *Cutting the size of meals*

11.280. Steps taken to alleviate food shortage refers to what the household did to try and overcome the food shortage. This will depend on national conditions but could include the following response categories:

- *Use savings to buy food*
- *Take out a loan*
- *Sell land or livestock*
- *Get another job*
- *Start or expand a family business*
- *Get help from relatives or other people*
- *Get help from the Government*
- *Get help from charities*

0902 WHETHER THE HOUSEHOLD FEARS A FOOD SHORTAGE DURING A FUTURE TWELVE-MONTH REFERENCE PERIOD (for the household)

11.281. Item 0902 relates to fears of a food shortage during a coming twelve-month reference period, such as the next agricultural year.

11.282. Fears a food shortage refers to the household's fear of getting into a food shortage situation at any time during the reference period because of the threat of natural disaster, loss of crops, loss of a job,

or other factors. The fear of food shortage relates to the household's own assessment of their food security situation for the coming year.

0903 FREQUENCY OF NORMALLY EATING SELECTED FOOD PRODUCTS (for the household)

11.283. This item provides information on the frequency of eating key food products. It can help to understand how diets change in the face of a food shortage or vulnerability to food shortage. The food products specified will vary from country to country and should focus on the food groups that best discriminate food insecurity. Thus, if households tend to respond to a food shortage by eating more maize and vegetables and less rice and meat, these food groups should be emphasized in Item 0903. It is not necessary to cover all food groups.

11.284. Data on food frequency should be collected for a relatively short reference period, such as a week or a month. The frequency can be reported in terms of categories such as: every day; often; sometimes; not at all.

0904 EFFECTS OF NATURAL DISASTERS (for the household)

0905 EXTENT OF LOSS OF AGRICULTURAL OUTPUT DUE TO NATURAL DISASTERS (for the household)

11.285. Items 0904 and 0905 are suitable for countries where natural disasters are prevalent and, when they occur, can have a major impact on the food security situation of the people affected. Normally, the census reference year is taken as the time reference.

11.286. Item 0904 refers to whether the household's food security situation was affected by specified natural disasters. For the purposes of the agricultural census, natural disasters include the major climatic and physical events, as well as major pest attacks. The types of natural disasters identified will depend on national circumstances. The following response categories may be suitable:

- *Floods or tidal waves*
- *Drought*
- *Typhoons or hurricanes*
- *Pests*
- *Other*

11.287. A household may have suffered because of more than one disaster and should be reported accordingly.

11.288. Item 0905 covers the extent of the loss as a result of the disasters reported in Item 0904. The extent of the loss of agricultural output should be measured according to suitable criteria, such as:

- *None*
- *Slight*
- *Moderate*
- *Severe*

11.289. Normally, Item 0905 relates to the overall effect of the natural disasters, not the effects of specific disasters or the effects on specific crops or livestock. For crops, loss is usually assessed in terms of the effect on crop production in comparison with a normal year, such as: slight – less than 20 percent lower; moderate – 20–40% lower; severe – more than 40% lower. Similar criteria can be used for livestock.

0911 HEIGHT AND WEIGHT (for children aged under 5 years)

11.290. The outcome of food insecurity is that people do not eat enough food and, for children, this is reflected in their growth. Data on the heights and weights of children aged under five years can be valuable in assessing the effect of household food security problems. By relating the height and weight

of a child to his/her age, one can measure the following indicators:

- Underweight; that is, the child's weight is too low for his/her age. Children may also be classified as moderately or severely underweight.
- Stunting; that is, the child's height is too low for his/her age. Children may also be classified as moderately or severely stunted.
- Wasting; that is, the child's weight is too low for his/her height.

11.291. To collect these data, enumerators need to be provided with measuring instruments; namely, a measuring tape to record heights and scales to record weights.

Theme 10: Aquaculture

Core items

0014 PRESENCE OF AQUACULTURE ON THE HOLDING

11.292. For the purpose of the agricultural census, presence of aquaculture refers to aquacultural production activities carried out in association with agricultural production. This means that the aquacultural activities are integrated with agricultural production, such as in rice-cum-fish culture, or that aquaculture and agriculture share the same inputs, such as machinery and labour. For more information on the treatment of aquaculture in the context of the national accounting framework, see Appendix 1. Aquaculture carried out independently of agricultural production is not included; for example, a household may have independently managed and operated agricultural and aquacultural activities.

11.293. Aquaculture is the farming of aquatic organisms such as fish, crustaceans, molluscs and plants. In this context, farming refers to some intervention in the rearing process to enhance production, such as regular stocking, feeding and protection from predators. Aquaculture normally involves rearing of organisms from fry, spat or juveniles. Aquaculture may be carried out in ponds, paddy fields, lagoons, estuaries, irrigation canals or the sea, using structures such as cages and tanks. It may be in freshwater or saltwater.

11.294. A distinction must be made between aquaculture and other forms of aquatic exploitation such as capture fisheries. Capture fisheries involve catching aquatic animals or gathering aquatic plants "in the wild". An important characteristic of capture fisheries is that the aquatic organisms being exploited are common property, as opposed to being owned by the holding as is the case for aquaculture.

11.295. The boundary between aquaculture and capture fisheries may be blurred. Where fish are caught in the wild and fattened up for sale, the fattening process should be considered as aquaculture. Limited enhancement actions taken to increase fish production, such as modifications to the aquatic habitat, should not be considered as aquaculture.

11.296. Data on aquaculture usually relate to activities carried out over a twelve-month period, usually the census reference year.

Supplementary items

1001 AREA OF AQUACULTURE ACCORDING TO TYPE OF SITE (for the holding)

- *Land-based*
 - *Arable land*
 - *Non-arable land*
- *Inland open water*
- *Coastal and marine waters*

11.297. Area of aquaculture refers to the area of land under water used for aquaculture. This means the

surface area of the pond, paddy field, lagoon, estuary, irrigation canal, or the sea used for aquaculture. The area figure should include supporting structures such as pond banks and floating structures of cages. The area of land-based aquaculture-related facilities such as hatcheries, storage buildings, fish processing facilities, laboratories and offices, should not be included. The area should include land owned by the holding as well as bodies of water rented from others for use for aquacultural purposes. Such bodies of water could include parts of rivers, lakes, reservoirs, dams, canals, lagoons/estuaries, bays/coves, or the open sea. The aquacultural area should refer to the area of the aquacultural facility on the body of water – for example, the total area of the pen or cage network in the water. Some holdings may have very small area of aquaculture.

11.298. Land-based aquaculture is aquaculture practised in rice fields, ponds, tanks, raceways and other land areas on the holding. Countries may need to develop procedures to distinguish between land-based and open water aquaculture for some water bodies such as ponds. The split into arable and non-arable land is intended to determine what part of the land-based aquaculture is practised on land that is also used for crop production. Examples of non-arable land are saline-alkaline lands and wetlands. Refer to paragraph 11.38 for the definition of arable land.

11.299. Inland open water includes dams, reservoirs, lakes and rivers. Coastal and marine waters include lagoons, estuaries, shallow and open seas, bays and coves, including inter-tidal mudflats.

11.300. The reference period for data on area of aquaculture is the census reference year.

1002 AREA OF AQUACULTURE ACCORDING TO TYPE OF PRODUCTION FACILITY (for the holding)

- *Rice-cum-fish culture*
- *Ponds*
- *Pens, cages and hapas*
- *Tanks and raceways*
- *Floating rafts, lines, ropes, bags and stakes*

11.301. Rice-cum-fish culture is the use of land for the culture of both rice and aquatic organisms. One form of rice-cum-fish culture is the introduction of brood-stock or seed into flooded paddy fields, often modified for aquacultural purposes. Another form of rice-cum-fish culture is where rice and fish are raised on the same land in different seasons. Fishing associated with fish from the wild that enter paddy fields during flooding is not included.

11.302. Pond culture is the breeding or rearing of aquatic plants or animals in natural or artificial enclosures. Pond culture is usually carried out in stagnant waters with periodic water exchange or water flushing through inlets and outlets. Sometimes, large ponds are used in association with cages or hapas. Often there is some integration between crops, livestock and pond culture, as in fish-cum-vegetable culture or fish-cum-animal husbandry.

11.303. Pens, cages and hapas are net enclosures used for rearing aquatic animals or plants in lakes, rivers, reservoirs or the open sea. Pens are fixed by frameworks made of metal, plastic, bamboo or wood. Cages are held in place by floating structures. Hapas are simple net enclosures suspended by stakes in the four corners in open water bodies.

11.304. Tanks and raceways are fixed structures used for raising aquatic animals or plants. They are normally built above ground and can be made of bricks, concrete or plastic. Tanks are small round or rectangular structures, whereas raceways are long, narrow structures.

11.305. Floating rafts, lines, ropes, bags and stakes refer to the aquacultural practice based on these facilities, commonly used for the cultivation of shellfish and seaweed.

11.306. The reference period for data on area of aquaculture is the census reference year.

1003 TYPE OF WATER (for the holding)

- Freshwater
- Brackish water
- Saltwater

11.307. This item refers to whether aquaculture on the holding was carried out during the reference year using water of the above types. There may be more than one type of water used on a holding. The type of water is usually closely related to the type of site in Item 1001.

11.308. Freshwater refers to reservoirs, rivers, lakes and canals, with consistently negligible salinity. Brackish water refers to waters with appreciable salinity but not to a constant high level. It is characterized by fluctuations in salinity due to regular influxes of freshwater and seawater, such as in estuaries, coves, bays and fjords. Enclosed water bodies in which salinity is greater than freshwater but less than seawater are also regarded as brackish. Saltwater (or marine water) refers to coastal and offshore waters where salinity is high and is not subject to significant daily or seasonal variation.

1004 SOURCES OF WATER FOR AQUACULTURE (for the holding)

- Rain-fed
- Groundwater
- Rivers/canals
- Lakes/reservoirs
- Dams
- Estuaries/lagoons
- Coves/bays/sea

11.309. This item refers to whether water for aquacultural production on the holding during the census reference year was obtained from the above sources. There may be more than one source of water used for aquaculture on a holding. The source of water is usually closely related to the type of site in Item 1001. Countries may wish to adapt these categories to suit local conditions.

1005 TYPE OF AQUACULTURAL ORGANISM CULTIVATED (for the holding)

- Freshwater fish
- Diadromous fish
- Marine fish
- Crustaceans
- Molluscs
- Other aquatic animals
- Aquatic plants

11.310. This item refers to which of the above types of aquatic organisms were cultivated on the holding during the census reference year. More than one type of organism may be cultivated on a holding. The classification refers to the type of aquatic animal or plant cultivated, not the type of aquacultural product generated. Thus, pearl production is shown under "Molluscs".

11.311. The main types of freshwater fish are carps and tilapias. Diadromous fish are fish that can live in both fresh and seawater, such as trout, salmon, eels and sturgeon. Marine fish include flounder, cod and tuna. Crustaceans are aquatic animals with hard shells, such as crabs, lobsters and shrimps. Molluscs are animals belonging to the phylum Mollusca, including abalones, oysters, mussels, scallops, clams and squids. Other aquatic animals include frogs, crocodiles, alligators, turtles, sea-squirts and sea urchins. Aquatic plants include seaweed and lotus.

Theme 11: Forestry

Core items

0015 PRESENCE OF FOREST AND OTHER WOODED LAND ON THE HOLDING

11.312. Presence of forest and other wooded land refers to whether such forest and other wooded areas are present on the land making up the agricultural holding. Refer to paragraphs 11.35–11.36 for the definition of forest and other wooded land. The reference period is the day of enumeration.

11.313. Often, holdings with forest and other wooded land are identified from holdings with land use “forest and other wooded land” in Item 0007. This is based on the concept of main use of the land. Some holdings have land not classified to land use “forest and other wooded land” that contains groups of forest trees or other wooded plants satisfying the criteria for “forest and other wooded land” in terms of tree height and crown cover. For example, “land under permanent meadows and pastures” may also contain forest trees and other wooded plants more than five metres in height with crown cover of more than 10%. To identify all holdings with forest and other wooded land, data on secondary land use are needed.

Supplementary items

1101 AREA OF FOREST AND OTHER WOODED LAND AS PRIMARY LAND USE (for the holding)

- Forest
- Other wooded land

11.314. The total area of forest and other wooded land as a primary land use is given in the land use classification in Item 0007. Item 1101 sub-divides this total into its two components.

1102 AREA OF FOREST AND OTHER WOODED LAND AS A SECONDARY LAND USE ON AGRICULTURAL LAND (for the holding)

- Forest
- Other wooded land

11.315. Area of forest and other wooded land as a secondary land use on agricultural land is the area of agricultural land with forestry and other wooded land as a secondary land use. Agricultural land covers arable land, land under permanent crops and permanent meadows and pastures (see paragraph 11.38). The reference period is the day of enumeration.

1103 MAIN PURPOSE OF FOREST AND OTHER WOODED LAND (for the holding)

- Production
- Soil and water protection
- Multiple use
- Other

11.316. This item relates to all forest and other wooded land on the holding, including forest and other wooded land as a secondary land use on agricultural land (see Item 1102). Main purpose is assessed in relation to an extended period, usually the census reference year.

11.317. Production refers to the production and extraction of forest goods, including both wood and non-wood forest products such as oils, leaves and bark. Other includes forest/other wooded land with no specific function.

1104 WHETHER AGRO-FORESTRY IS PRACTISED (for the holding)

11.318. Agro-forestry is a sustainable farm management system in which trees and other wooded plants are purposely grown on the same land as agricultural crops or livestock, either concurrently or in rotation. Agro-forestry is characterized by the existence of both ecological and economic interactions between the different components. Agro-forestry includes agrosilvicultural (trees and crops), silvopastoral (trees and livestock), and agrosilvipastoral (trees, crops and livestock) systems.

11.319. Agro-forestry refers to specific forestry practices that complement agricultural activities, such as by improving soil fertility, reducing soil erosion, improving watershed management, or providing shade and food for livestock. Just growing trees on agricultural land is not considered agro-forestry. Countries need to develop their own procedures to collect these data. Some may wish to collect data on specific agro-forestry activities. The reference period for agro-forestry data is the census reference year.

12. Management of the holding

Supplementary items

1201 IDENTIFICATION OF SUB-HOLDINGS (for the holding)

1202 IDENTIFICATION OF SUB-HOLDERS (for the holding)

11.320. A sub-holding is a group of agricultural activities on the holding managed by a particular person in the holder's household. A sub-holder is a person responsible for managing a sub-holding. Refer to paragraphs 3.42–3.52 for the definitions of sub-holder and sub-holding and a discussion of data collection issues for these items.

1211 SEX OF SUB-HOLDER (for each sub-holding)

1212 AGE OF SUB-HOLDER (for each sub-holding)

11.321. A census supplementary module on management of the holding usually includes data on demographic and social characteristics of household members (Theme 07) and economic activity of household members (Theme 08). Once the sub-holder is identified, he/she can be linked to the Theme 07 items to provide information on his/her characteristics, especially sex (Item 0711) and age (Item 0712).

11.322. Data on other characteristics of the sub-holder are usually also available from the Theme 07 and Theme 08 items, and may be useful for agricultural census analysis. This includes: relationship to household head (Item 0713); marital status (Item 0714); educational attainment (Item 0715); activity status (Item 0801); status in employment of main job (Item 0811); occupation of main job (Item 0812); time worked in main job (Item 0813); and time worked on the holding (Item 0814).

1213 AREA OF CROPS MANAGED FOR EACH CROP GROUP (for each sub-holding)

1214 NUMBER OF LIVESTOCK MANAGED FOR EACH LIVESTOCK GROUP (for each sub-holding)

11.323. Area of crops managed refers to the area of the particular crop group under the control of the sub-holder. This relates to that part of the crop area in Item 0301 (temporary crops) and Item 0311 (permanent crops) that is under the control of the sub-holder. This refers to the area harvested during the reference year for temporary crops, or the current area for permanent crops.

11.324. Crops should be categorized into several groups suitable to national conditions, based on the crop classification given in Appendix 3. One possible grouping is:

- Grain crops
- Vegetable crops

- *Other temporary crops*
- *Permanent crops*

11.325. Number of livestock managed refers to the number of livestock managed by the sub-holder. This relates to those livestock in Item 0013 that are under the control of the sub-holder. This usually refers to the livestock numbers on the day of enumeration.

11.326. For reporting of Item 1214, livestock should be suitably grouped, based on the livestock classification in Appendix 5. One possible grouping is:

- *Large ruminants and equines*
- *Other animals*
- *Poultry*
- *Other*

11.327. The method of collecting crop and livestock data for sub-holdings and sub-holders will depend on local conditions and the existing data collection methodology for crops and livestock. One method for crops is to identify all the plots of land making up the sub-holding, and collect data on the area of crops harvested for each plot. This approach may be suitable where countries already collect crop data at the plot level; otherwise, it may add complexity to the data collection operation.

11.328. Usually, it is better to collect the sub-holding/sub-holder data separately from the main crop and livestock data, by asking specific questions about the type of crop and livestock activities carried out under the control of the sub-holder. The crop and livestock data can be reported in broad groups as shown in paragraphs 11.324 and 11.325.