Guidelines for development of a classification system related to Farm Typology
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GUIDELINES FOR DEVELOPMENT OF A CLASSIFICATION SYSTEM RELATED TO FARM TYPOLOGY
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# Acronyms

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<td>AAU</td>
<td>agricultural area utilized</td>
</tr>
<tr>
<td>ARC</td>
<td>Agricultural Research Centre (Ministry of Agriculture of Azerbaijan)</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>FADN</td>
<td>Farm Accountancy Data Network</td>
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<td>FDMS</td>
<td>Farm Data Monitoring System</td>
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<tr>
<td>FT</td>
<td>Farm Typology</td>
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<tr>
<td>GSS</td>
<td>Ghana Statistical Service</td>
</tr>
<tr>
<td>GSARS</td>
<td>Global Strategy to improve Agricultural and Rural Statistics</td>
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<tr>
<td>LCMS</td>
<td>Living Conditions Monitoring Survey</td>
</tr>
<tr>
<td>LCU</td>
<td>local currency unit</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>OGA</td>
<td>other gainful activities</td>
</tr>
<tr>
<td>RALS</td>
<td>Rural Agricultural Livelihoods Survey</td>
</tr>
<tr>
<td>PPP $</td>
<td>Purchasing Power Parity Dollars</td>
</tr>
<tr>
<td>SDG</td>
<td>Sustainable Development Goal</td>
</tr>
<tr>
<td>SNA</td>
<td>System of National Accounts</td>
</tr>
<tr>
<td>SSC</td>
<td>State Statistical Committee</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>UNSD</td>
<td>United Nations Statistical Division</td>
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<tr>
<td>WAW</td>
<td>World Agriculture Watch (FAO project)</td>
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Executive Summary

According to the most recent estimations\(^1\), there are at least 570 million farms worldwide, presenting great diversity in terms of size, land and livestock structures, production systems, etc. The large number of farms and contexts determine the vast range of agricultural policies and tools implemented at national and regional level. The growing interest in particular policy issues, such as food security and well-being of farms around the globe, leads to the need to identify and target vulnerable farms. There is clearly an interest in moving sector-level aggregate agricultural statistics into more disaggregated presentations to provide perspectives that are essential for sound policy design.

Usually, agricultural data tabulation is made at national or lower (regional and local) level using a classification of farms that is based on one variable, such as the size of the farm’s land, the size of the herds of different livestock types, the farm’s legal status, etc.\(^2\) Farm typology is a multidimensional classification of farms, where more than one classification variables are used to put farms in homogeneous groups, while still meeting both exclusivity and exhaustivity criteria\(^3\). The crossing of different dimensions defines unique farm types, and each farm can be classified into one and only farm type.

Grouping similar farms into a farm type based on multiple dimensions allows for simplification of farm diversity, analysis of particular farm types and comparison between different farm types. Farm typology is already applied at national and regional level in developed countries, where it is generally used in:

- sample designs, to ensure the representativeness of surveys that collect data on farm structure and farm income,
- the presentation of results from such surveys, that enable analysis of the structure, performance, sustainability and transformations of farms by farm type, and
- policy-making that focuses on different aspects of sustainable development.

In developed countries, farm typology is an important element of the integrated agricultural statistics system. In developing countries, too, there are many examples of farm typology developed for the purposes of particular research projects. However, these examples are often criticized as not being representative for the entire country or for all types of farms. Furthermore, such farm typologies are often unsustainable and end once the research project is over.

The development of an internationally coherent classification of agricultural holdings, called farm typology (FT), with policy relevance has been identified as an important potential component of the long-term framework for the improvement of agricultural statistics in developing countries. These Guidelines on Farm Typology propose a tool to be used to classify agricultural holdings by multiple dimensions, aiming at enhancing comprehension of the farm structures and production diversity both between and within countries, and at more efficient targeting in agricultural and rural policies and investments. A policy-relevant FT must (i) classify farms in such a manner that the farms within a class are similar, in terms of the needs for primary policy responses; and (ii) classify other farms into other classes in such a manner that each are distinguishable, in terms of alternative primary policy responses.

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\(^2\) See WCA 2020, chapter 10.

\(^3\) See the UNSD definition of classification: “The categories at each level of the classification structure must be mutually exclusive and jointly exhaustive of all objects in the population of interest.” (UNSD, 2013a).
Considering the recognized need for improved statistics in developing countries, the Global Strategy to improve Agricultural and Rural Statistics (GSARS) sets internationally agreed methods to build FT, to guide countries in the process of policy-relevant classification of farms. The implementation of FT at national level would contribute to the GSARS efforts to:

- improve data quality in all its aspects, in particular the relevance and reliability of statistical data;
- enlarge the focus from agriculture, including farm diversification activities; and
- promote integrated agricultural statistical systems.

The present Guidelines on Farm Typology were developed by the GSARS to address the needs of countries at different stages of development, using the experience of countries where FT is already developed and implemented, the opinions of experts in the fields of international development and policy, the endorsed concepts, definitions and methodology for the World Census of Agriculture 2020 (WCA 2020) developed by the Food and Agriculture Organization of the United Nations (FAO; see FAO, 2015), as well as the methodology created for the Agricultural Integrated Survey (AGRIS; see GSARS, 2018).

For FT purposes, the scope and coverage are defined as follows:

The **basic unit of observation** is the agricultural holding as defined by WCA 2020, §6.2 and the AGRIS methodology (GSARS, 2018; p. 9).

An agricultural holding is an economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for agricultural production purposes, without regard to title, legal form or size. Single management may be exercised by an individual or household, jointly by two or more individuals or households, by a clan or tribe, or by a juridical person such as a corporation, cooperative or government agency. The holding’s land may consist of one or more parcels, located in one or more separate areas or in one or more territorial or administrative divisions, providing the parcels share the same production means, such as labour, farm buildings, machinery or draught animals.

The **scope of agricultural activity** is the same as the scope of the census of agriculture (WCA 2020, §6.22 to 6.25), adopted also in the AGRIS methodology (GSARS, 2018; p. 101 and annex 1). It includes the following groups as defined under ISIC Rev.4:

- Group 011: Growing of non-perennial crops
- Group 012: Growing of perennial crops
- Group 013: Plant propagation
- Group 014: Animal production
- Group 015: Mixed farming

Other on-farm economic activities, such as fishery, forestry and aquaculture, are considered diversification activities of the farm. However, if a unit has other economic activities but none of the agricultural activities listed above, the unit is considered out of scope, for the purposes of FT.

Conceptually, FT **covers** all agricultural holdings within the country. However, in many countries, a group of units that engages in agricultural activity and that belongs to the household sector (although there may also be units belonging to the non-household sector) is excluded from the definition of “agricultural holding” (WCA 2020, §§6.30–6.32; GSARS, 2018; p. 102). These are units producing small quantities of food, generally for own consumption, and their cumulated share of total agricultural activity is marginal. The units excluded from the definition of “agricultural holding” are below the threshold and should be grouped into a separate, specific farm type, for which at least the number of farms, the agricultural area utilized and the number of livestock should be estimated.
The FT is a multidimensional classification of agricultural holdings that aims at classifying farms into homogeneous groups, taking into consideration the complexity of climate and agricultural contexts around the world and the differences between countries’ agricultural statistical systems. The classification is based on four dimensions, selected from among a long list of dimensions following a thorough literature review, consultation with development experts and considering the availability of data in the majority of the developing countries. The classification variables for each dimension were defined on the basis of two principles:

- as much as possible, use existing data from countries’ statistical systems, FAO concepts and definitions and the WCA as the main concept frame, integration with the AGRIS methodology, and national surveys focused on agriculture; and
- select from the predominant classification variables available, or use proxies if there are doubts as to data quality.

The four dimensions are outlined below.

**Farm profile** takes into consideration the legal status of the holder and the purpose of the farm’s agricultural production (market integration). This dimension allows for the classification of farms of civil persons producing mainly for own consumption, commercial farms of civil persons, and commercial farms of juridical persons (enterprises). Countries may apply additional criteria for classification (importance of time spent on the farm, family labour, other economic activities, etc.) for their national classes under this dimension, which may be more detailed, to identify units with marginal agricultural activity (usually falling below the farm threshold), subsistence farms, family farms, hobby farms, cooperatives, etc.

**Farm size** may be defined using physical or economic criteria. The size of the agricultural area utilized is a straightforward criterion for defining farm size. However, it does not account for the size of livestock-breeding activities, intensive crops and different production systems. The use of economic criteria is then analysed. Considering the difficulties in collecting financial information from each individual farm, the estimation of farm agricultural output based on the average (or standard) output per hectare of crop and per head of livestock category is proposed as a proxy for the farm income. The methods of estimation of average output are detailed with examples. The farms can be then classified into farm-size classes based on the level of their total agricultural output expressed in national currency. As there is no one generally endorsed international definition of farm size, the determination of size classes (small, medium, large, etc.) remains entirely within the competence of individual countries.

**Commodity specialization** is related to the type of the main agricultural production activity of the holding. The main agricultural production activity may be defined directly by the farmer, or it may be determined using the contribution made by each product to the total agricultural output of the farm. Three main categories are to be distinguished at the most aggregated level: crop production, livestock production, and the combination of both. According to national and regional needs, countries may disaggregate these three classes by defining additional specializations, to distinguish between: perennial and non-perennial crops; types of production systems; types of livestock breeding, intensive or extensive production systems; rain-fed or irrigated agriculture; etc.

**Diversification** of farms refers to the importance of other economic activities carried out on the farm. Often, agricultural holdings are engaged in economic activities other than agricultural production although still using the resources of the farm, such as buildings, equipment and labour. For example, in addition to producing crops or breeding livestock, an agricultural holding may engage in forestry activities; households operating agricultural holdings may also operate a shop or restaurant using the food produced on the farm or the same labour force. Diversified farms may have one or more other economic activities, and the share of each in farm’s total output may vary significantly. Countries may consider classifying diversified farms further based on the share of total farm income constituted by income derived from other economic activities.
These four dimensions are the building blocks of the FT; each crossing of dimensions creates a unique combination, called farm type. There is no fixed hierarchy between the dimensions and the classification may be done according to national priorities, using one or more dimensions. Additional aggregation or disaggregation of the classes in each dimension is possible. The most commonly used combinations of dimensions are given in some of the figures of these Guidelines. Using this classification, various sets of statistics could be produced and regularly published to analyse the current status of farms by farm type, to follow the evolution of farms by farm type, to evaluate the impact of policies by farm type, to conduct simulations, etc.

Countries have various sources that can be used to establish farm typology at national or regional level. However, most of these sources raise data quality issues related to the coverage of the agricultural holdings population, the accuracy of the collected data, the frequency and timeliness of statistical output and the accessibility of the sources. Two types of data are necessary to calculate the classification variables of the FT: (i) data at farm level (for example, area by crop or number of livestock by category); and (ii) aggregated data at national or regional level (crop yield, milk production per animal, price per quantity of agricultural product, etc.).

i. Data at farm level is generally collected through agricultural censuses, sample agricultural surveys and administrative register systems. Household surveys may also be considered as a source for data at farm level. However, their samples are usually small, covering only household units and are usually not focused on agriculture. Thus, the data collected may not be representative of all farm types at national and regional level.

ii. Aggregated data at national and regional level may be obtained from all sources mentioned above, as well as from other sources, such as administrative data, expert estimates and technical coefficients.

The AGRIS methodology, recently developed by GSARS, is a tool that is considered a relevant source for both data at farm level and aggregated data. At the same time, it would benefit from FT for its sampling and data analysis activities. The AGRIS pilot test conducted in Ghana in 2018 was used as a case study to finalize the list of variables from AGRIS generic questionnaires that will be used to calculate classification variables and to establish FT, as defined in these Guidelines. The case study demonstrates the work that countries should do when analysing their own AGRIS data to compute FT classification variables and determine the FT. The study concludes that AGRIS enables the establishment of sound FTs, and that the majority of the classification variables are foreseen in the AGRIS questionnaire and could be either collected as farmer declarations or computed on the basis of auxiliary variables. As FT is rarely built by using only one source, other sources, such as price statistics, production statistics or technical coefficients, are often necessary.

To further support countries in the process of determination and definition of the concept of farm typology for their national purposes, other two case studies are also presented in the annex to these Guidelines. The case studies also demonstrate the work that countries should do when analysing their own data to compute FT classification variables and determine the FT.
In Zambia, the Post-Harvest Survey (PHS) for 2012–2015 was analysed for the purposes of the FT desk study. The PHS is an annual sample survey carried out with two questionnaires, one for small and medium farms and one for large farms. Large farms are surveyed exhaustively. Most of the classification variables could be computed from the PHS. Some areas for improvement and harmonization between the two questionnaires were identified. The FT methodology is an interesting way of presenting the PHS results, which provides more analytical possibilities for data users and for future integration with other important national surveys (such as the country’s Rural Agriculture Livelihood Surveys).

In Azerbaijan, the desk study analysed two sources that collect data at farm level: the Agricultural Census 2015 (AC 2015) and the annual Farm Data Monitoring System (FDMS). The analysis revealed that both surveys collect the necessary variables with minor harmonization being required between the definitions and classifications used. In conclusion, Azerbaijan could define the FT based on the AC 2015 and the FDMS using all four dimensions: farm profile, farm size based on agricultural area and economic size, commodity specialization, and diversification. The FT would be a valuable asset to the agricultural statistical system of the country as applied to both the AC and the FDMS if it is used to draw a representative sample for FDMS, thus ensuring that all farm types are represented in the economic survey.
Agriculture is still the most important sector of national economies in many developing countries. Agricultural statistics are a key prerequisite for the management of the sector. They provide information required to monitor trends and estimate the future prospects of agricultural commodity markets, and, therefore, to assist in making policies on aspects such as price support, imports and exports, and distribution. In particular, statistics on crop area, production and yield play a central role in the planning and allocating of resources for the development of the agricultural sector.

Many developing and underdeveloped countries, however, still lack the capacity to produce and report even the minimum set of core agricultural data. As a response to this issue, at its Forty-first session in February 2010, and after an extensive consultation process with national and international organizations, the United Nations Statistical Commission (UNSC) endorsed the Global Strategy to improve Agricultural and Rural Statistics (GSARS).

GSARS is a capacity development initiative for improving the availability of data on the agricultural and rural sectors, necessary for evidence-based decision-making. This initiative is implemented through a Global Action Plan, which defines the technical assistance, training and research plans as well as the governance mechanisms. Under the GSARS Research component, one of the priority areas of work identified was the development of Improved Methods for Producing Crop Statistics (namely, statistics on crop area, production and yield). Accordingly, a series of projects under specific domains of crop statistics were conducted during the first phase of GSARS, which resulted in the production of a series of working papers and technical reports to serve countries seeking to improve the quality of their crop statistics. More specifically, projects aiming to bring about improvements in the following domains were undertaken:

- estimation of area, production and yield for mixed, repeated, and continuous cropping;
- estimation of area, production and yield of root crops;
- estimation of area, production and yield of vegetable crops.

This publication is, on one hand, an attempt to pull all these efforts together into a comprehensive Handbook on methods for producing crop statistics. On the other, it updates a previous publication of the Food and Agriculture Organization of the United Nations (FAO), entitled Estimation of crop areas and yields in agricultural statistics, which – despite being a reference point in the field of crop statistics – dates back to 1982.
Introduction

There is a recognized need for improved statistics to address pressing policy issues relating to the food security and well-being of farm households around the world, particularly the most vulnerable. The agricultural statistical community is united to address this need through its efforts in developing the Global Strategy to improve Agricultural and Rural Statistics (GSARS) programme. Development experts are hopeful that GSARS will positively contribute to the widely acknowledged problems affecting agricultural data, namely poor quality and a narrow focus on agricultural production (Chen et al., 2013; Carletto, Joliffe, and Banerjee, 2015). In particular, the latter issue may prevent acquisition of important detail on the majority of people engaged in agricultural production.

While the primary focus of GSARS has clearly been to address developing countries’ lack of capacity to provide reliable statistical data on food and agriculture, a secondary aspect of the programme has been to provide a “blueprint” for future agricultural statistical systems. Given the limited data collection possible, for example, through agricultural censuses that are conducted every five to ten years, at best, it is essential that long-term plans be in place to provide a framework for future statistical advances. The GSARS Action Plan includes a Research Programme to address the methodological issues associated with the long-term framework.

The development of an internationally coherent classification of agricultural holdings, further called farm typology (FT), with policy relevance has been identified as an important potential component of the long-term framework. The FT classifies agricultural holdings by crossing multiple classification dimensions, aiming at fostering better understanding of farm structures and production diversity between countries and within a country, and at more efficient targeting in agricultural and rural policies and investments. A policy-relevant farm typology must (i) classify farms in such a manner that the farms within a class are similar, in terms of the needs for primary policy responses; and (ii) classify other farms into other classes such that each are distinguishable in terms of alternative primary policy responses.

For the purposes of these Guidelines, the definition of the term “classification” recently provided in GSARS (2015a; p. 1) will be used, as it is applicable to the proposed goal of developing an FT with a level of international coherence.
A statistical classification is defined as “a set of categories which may be assigned to one or more variables registered in statistical surveys or administrative files, and used in the production and dissemination of statistics. The categories are defined in terms of one or more characteristics of a particular population of units of observation. A statistical classification may have a flat, linear structure or may be hierarchically structured, such that all categories at lower levels are sub-categories of a category at the next level up. The categories at each level of the classification structure must be mutually exclusive and jointly exhaustive of all objects in the population of interest.” (United Nations Statistical Division, 2013)

The FT is an important element of an efficient agricultural statistical system at national level. The classification of farms into homogeneous types will (i) enable analysis of their structure, performance and sustainability; (ii) allow for the formulation, implementation and evaluation of policies that focus on different aspects of sustainable development; (iii) at national level, provide elements for more efficient sample design and data matching through stratification of the vastly diversified population of agricultural holdings.

In most cases, statistical presentations to capture the farm structure of a country’s agricultural sector are classifications of farms based on a single variable. However, a subset of countries also provide classifications of farms or farm households that are based on hierarchical classifications of more than one variable, often referred to as typologies. Multiple-variable typology classifications, such as more simplistic single-variable classification schemes, have non-overlapping categories so that each farm is classified into one and only one category. The countries known to have official multiple-variable typology classifications of farms also provide for a variety of single-variable classifications of farms. Typology classifications may be developed from both national sample surveys and censuses of agriculture. Surveys generally have more flexibility for collection of additional data used in typology development, such as crop and livestock production and utilization, prices, etc.

1.1. BACKGROUND ON FARM TYPOLOGY POLICY RELEVANCE

Countries use a variety of targeted agricultural policy tools to affect agriculture – some in a positive way and some in a negative way; some in an intended ways and some in unintended ways. Furthermore, many non-agricultural policies have significant effects on agriculture and the well-being of people engaged in agricultural production, such as infrastructure and human capital investment. Currently, 68 percent of agricultural policy support to farmers in major agricultural countries (that is, the 50 countries covered in the statistics of the Organisation for Economic Co-operation and Development, or OECD) is provided through market price support (OECD, 2016: p. 25). For the OECD countries and selected other major agricultural producing countries that account for the majority of world agricultural output, the OECD measures the level of support provided by agricultural policies through its Agricultural Policy Monitoring and Evaluation programme (OECD, 2016). Measuring the level of policy support is, of course, more straightforward than measuring the impacts of policies relative to their goals.

In the development of an internationally coherent typology classification, the question is how to ensure that it is policy-relevant in a global context. In this regard, it is useful to reflect on the policy process as comprising the following:

- goal-setting and indicators of goal attainment
- policy design
- policy impacts
**Goals.** The recent successful effort by the United Nations (UN) to negotiate an agreement on the Sustainable Development Goals (SDGs) forms a basis for the identification of a policy-relevant typology classification, as it represents a global agreement on the goals to be reached through sound policies. The formulation of the SDGs was consultative and conducted in a bottom-up manner (UN, 2015 and 2016; UNSD, 2013 and 2017). The Agenda includes 17 SDGs and 169 targets. The goals address the three standard dimensions of sustainable development: economic, social and environmental. The SDG agenda also includes quantifiable indicators of goal achievement.

While SDG 2 (*End hunger, achieve food security and improved nutrition and promote sustainable agriculture*) places clear focus on the agricultural sector, many of the other 16 goals are related to agriculture, directly or indirectly. The SDG report refers to the “Integration Imperative” of the SDGs, the need to take an integrated approach to development interventions (UN, 2016). Thus, many SDGs are relevant to farm-related production activities. With respect to agriculture, the emphasis on inequality and gender empowerment is especially noteworthy, as both of these issues merit high consideration. Even if they are not directly addressed in the development of the FT as classification variables, relevant data must be produced by farm types.

**Policy design.** While the SDGs represent an international consensus of goals, the 193 individual countries each carry out their national policy agendas to achieve their own country’s goals. The range of policies is vast – unsurprising, given the large number of farms and contexts. Lowder, Skoet, and Raney (2016) report that there are at least 570 million farms globally. The authors indicate that these farms account for 97 percent of the population active in agriculture and 90 percent of agricultural land. Furthermore, 72 percent of all farms worldwide have an area smaller than 1 hectare (ha), with another 22 percent having an area between 1 and 5 ha. Given the large share of smallholders worldwide, it is useful to consider policies targeting smallholder farmers. The various pathways of adjustment for smallholders should be considered when evaluating an internationally coherent typology classification. These include: helping farmers and their households to be more competitive in the agricultural marketplace; diversifying incomes within agriculture; diversifying incomes outside of agriculture; and leaving agriculture for off-farm work. In addition, a final pathway to adjustment is to provide a social safety net for those who are unable to adjust. Therefore, an internationally coherent typology classification should be capable of identifying farm types in which a significant share of farm households need safety-net support.

FAO is proposing a new international definition of “small-scale food producers” to identify the target population of SDG indicators 2.3.1 and 2.3.2. The definition aims at ensuring comparability at international level and at adopting a relative approach when establishing the thresholds that separate small-scale producers from other producers. The FAO proposal defines small-scale food producers using a combination of two criteria applied in relative terms:

- the physical size of the food producer (based on operated land, in ha, and number of livestock heads, measured in Tropical Livestock Units); and
- the economic size of the food producer (based on the annual economic revenue obtained from agricultural activities).

This definition is developed for the purposes of monitoring the SDG indicators. However, countries may apply specific definitions for their national purposes. The FT dimensions can be used to further classify small-scale food producers.

**Policy impacts.** Significant resources are expended by international institutions, research organizations and governments to decipher the causal nature of policies for individual countries and regions. The landmark World Bank 2008 *World Development Report* is an example of such work. However, dedicated journals and other insightful compendiums and donor reports are plentiful. The point is that identifying the impact of policies and the complex path to desirable outcomes are not straightforward endeavours. What is important to consider in typology development is whether the constructed types point to particular policy needs associated with particular policy levers.

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1 74 percent of these farms are in Asia.
In the work underscoring the development of these Guidelines, a team led by Mary Clare Ahearn carried out a thorough literature review of policies targeting smallholders, existing farm typology classifications and international economic development literature. The opinions and needs expressed by international development experts were analysed through semi-structured interviews. These approaches were used to translate the requirement for policy relevance into a specification of FT classifications and to draw recommendations towards the selection of a classification scheme.

1.2. THE FARM DIVERSITY NEEDS TO BE ADDRESSED IN STATISTICS

The experts’ preparatory work demonstrated a clear interest in moving sector-level aggregate agricultural statistics into more disaggregated presentations, to provide perspectives that are essential for sound policy design. There is also interest in farm household classifications. This is supported by the priorities of the SDGs, for example, the focus on small-scale food producers. Although less clear, it is arguable that this is also supported by official national statistical agencies, as many of the agencies with the largest per-farm budgets for data collection have developed hierarchical classification systems that include aspects of household characteristics. A household focus is also clearly revealed in the international development literature and by semi-structured interviews with experienced observers of the field.

There is significant variation across countries in terms of the specific presentation of official statistics on farm classifications. The three most common classifications are by:

- region
- type of commodity specialization
- size of farm

Subnational regional classifications are best defined by countries. The type of commodity specialization benefits from an international classification system: the International Standard Industrial Classification of All Economic Activities (ISIC) (reviewed in the WCA 2020; see FAO, 2015). Size classifications are guided by two differing concepts: Land in Holding and Economic Size, that is, a monetary value of output. Size measured in terms of land area is by far the most common, because of its ease of measurement. Lowder, Skoet, and Raney (2016) recently made an important contribution, in their efforts to classify approximately 570 million farms globally by size of farm, based on ha classes. The choice of size concept involves a pragmatic trade-off between coverage – as ha size classes are more widely available – and standardization of economic output in the classification of farm production.

Discussions with experts and a review of literature point to many unresolved policy challenges, solutions to which could be more clearly illuminated with an internationally coherent typology classification. Such issues include: market access; environmental impact of production; control of land; rural non-farm employment opportunities; economies of size, intra-household decision-making; access to capital and labour; and access to the returns of own labour. Taken together, these aspects become important aspects of the underlying conceptual framework of the proposed farm typology classification, ensuring relevance of the classification for policy purposes.

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3 Team members: Mary Clare Ahearn – leader, Silvia Saravia Matus, Ankouvi Nayo, Alvaro Ramos; Romeo Recide, Thierry Vard (consulted), under the supervision of GSARS experts: Flavio Bolliger, Neli Georgieva (Global Office, GSARS), with the support of Marie-Aude Even, and Jean-Francois Giovannetti (FAO, World Agriculture Watch).

4 Note that this observation is conditional upon the official statistical publications available in English.
1.3. PURPOSE OF THE FARM TYPOLOGY GUIDELINES

The purpose of the present Guidelines on Farm Typology (hereafter, the Guidelines) is to help countries define the FT concept frame within their specific country context and to produce and compile the necessary classification variables for the establishment of their national FT.

The FT can be applied to data from the agricultural census or to any other data source that contains the set of classification variables at farm level (agricultural surveys, administrative registers, population census, household surveys, etc.).

The Guidelines provide the basic concepts and definitions to be used in building the FT, in line with the WCA 2020 and the AGRIS methodology. They recommend the FT dimensions that aim to define a common framework for determination of farm types at regional and international level, and provide options for more detailed national or subnational classifications.

According to the development experts interviewed by Mary Clare Ahearn, the following dimensions are considered a priority:
- household versus non-household distinction (farm profile)
- farm size (physical or economic)
- market integration (access to market)
- commodity specialization (main agricultural production)
- non-farm employment (diversification of income) or other economic activity of the farm (diversification of activities)

These Guidelines also discuss the articulation between the proposed FT and existing farm classifications. When developing the FT, two guiding principles are recognized:
- The FT is to be built on, and integrated with, the established statistical system. Several statistical agencies have already identified most of the relevant concepts and definitions to be employed in an FT classification, with FAO bringing significant expertise in the international arena. Therefore, whenever possible, FAO concepts and definitions should be employed.
- FT classification variables are determined by the trade-off between available data for a significant share of the world’s farms. When the collection of a potential classification variable is assumed to not be conducted on a regular basis and with the required degree of quality for a large part of the countries, another variable, which is often easily available in the majority of the countries, is chosen.

These Guidelines recognize the great variety in terms of the coverage and availability of statistical data among countries, and suggest different levels of detail for the compilation of the classification variables. These levels are presented as basic, silver and gold standards. Formulae and examples of calculation of coefficients related to the determination of the farm’s economic size and other calculated or derived variables are also discussed in detail.

The majority of the classification variables are selected from among the items of the WCA 2020 that are recommended as essential. The selection may be found in the AGRIS Core Module of the Agricultural Integrated Survey (AGRIS), as they are expected to have good coverage and a higher level of coherence across countries. Two types of data are necessary for the calculation of the FT’s classification variables: (i) data at farm level (for example, area by crop, number of livestock by category) and (ii) aggregated data at national or regional level (crop yield, milk production per animal, price per quantity of agricultural product, etc.).

The Guidelines identify the main sources of data; other sources of data and new data collection are also discussed, to compile missing data.

Finally, examples and case studies from countries are provided to support the practical implementation of the FT in different agricultural contexts.

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5 For more details on AGRIS, see chapter 5.3 these guidelines and http://gsars.org/en/tag/agris/
Concepts and definitions of the Farm Typology

The great variety of farm structures and production systems between countries and within a single country leads to the use of different definitions and concepts for the Farm Typology producing and using statistics that describe them. This chapter defines the framework of the FT, seeking to foster a harmonized approach among countries.

The concepts and definitions proposed here are in line with the WCA 2020, as the main FAO statistical programme, and with the AGRIS methodology developed by GSARS.

Based on the international concepts and definitions for unit of observation, scope of activity and coverage (threshold), countries may define the concept frame for their national FT.
2.1. OVERVIEW

These Guidelines on Farm Typology are proposed as a tool to meet the policy needs for understanding the structure of agriculture.

Recognizing the importance of small agricultural holdings, associated to households, for poverty reduction and food security, the FT is designed in such a way as to enable identification of smallholders worldwide and their comparison to other agricultural holdings in the country and between countries.

The FT is a multidimensional classification of agricultural holdings that aims to classify farms into homogeneous groups, taking into consideration the complexity of the climate and agricultural contexts around the world as well as the differences between countries’ agricultural statistical systems. The classification is based on four dimensions:

- farm profile
- farm size
- commodity specialization
- diversification

The classification of the agricultural holdings into homogeneous groups may be more or less detailed, when crossing all or some of the dimensions above and different levels of their aggregation. The farm type is each homogeneous group obtained by means of dimension-crossing. Once the agricultural holdings are classified into types, the data to be reported for each type would be selected according to data availability.

The most essential data to be reported for each type of holding are:

- number of holdings
- number of persons working on the holding (family and non-family): total and average per farm
- gender, age and educational attainment distribution of the holders and holding managers
- number of ha of agricultural land and per main crop: total and average per farm
- number of livestock per main livestock type and category: total and average per farm
- gross agricultural output: total and average per farm
- tenure distribution of the land of the holdings
- productivity indicators
- on-farm income, income from agricultural activities, income from other on-farm economic activities (for all legal statuses of the agricultural holdings): total and average per farm

Considering the importance of issues related to inequality and gender empowerment, and the need to identify farms in the household sector requiring support, in addition to general agricultural holding data, the essential data to be reported for types of holding belonging to the household sector are:

- number of persons (male/female) in the household
- number of and share of persons in poverty
- number and share of persons with food insecurity
- pluriactivity of the holder and holder’s family
- total household income, on-farm and off-farm income
2.2. UNIT OF OBSERVATION (AGRICULTURAL HOLDING)

The FT described in these Guidelines applies to the population of agricultural holdings. Each country has its own (and, in some cases, more than one) definition of agricultural holding, food producer, agricultural household, family farm, etc. As the objective of these Guidelines is to establish an international framework for FT, the definition of agricultural holding provided in the WCA 2020, which was also adopted by the AGRIS methodology, is proposed as the basic unit of observation.

**Agricultural Holding (WCA 2020, §6.2; AGRIS Handbook, p. 9)**

An agricultural holding is an economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for agricultural production purposes, without regard to title, legal form or size. Single management may be exercised by an individual or household, jointly by two or more individuals or households, by a clan or tribe, or by a juridical person such as a corporation, cooperative or government agency. The holding’s land may consist of one or more parcels, located in one or more separate areas or in one or more territorial or administrative divisions, providing the parcels share the same production means, such as labour, farm buildings, machinery or draught animals.

For the purposes of these Guidelines, “agricultural holding” and “farm” are used interchangeably. Countries that use the term “farm” to define a specific subpopulation of agricultural holdings for national purposes should be particularly aware of this fact.

The following are additional useful international definitions that will be used to classify agricultural holdings by status.

**Household versus non-household sector**

There are two types of agricultural holdings (WCA 2020, §6.4; AGRIS Handbook, p. 107): (i) holdings in the household sector – that is, those operated by household members; and (ii) holdings in the non-household sector, such as corporations and government institutions. In most developing countries, the majority of agricultural production occurs in the household sector. The concept of “agricultural holding” in the household sector is therefore closely related to the concept of “household”. However, large private and public companies may make a significant contribution to agricultural production. Although small in number compared to households, and even though they belong to the non-household sector, they should not be omitted when the total population of agricultural holdings is analysed.

**Agricultural holdings in the household sector**

In many countries, the individual households drawing income from self-employment in agriculture are defined as agricultural household; corporate agricultural enterprises, conversely, are registered as legal entities. Agricultural households and enterprises are often subject to separate data collection processes (sample surveys, reporting, expert estimates etc.).

Individual professionals (entrepreneurs) who belong to an individual household but behave as enterprises are classified either as agricultural households or as enterprises, depending on the country.

In many countries, a household or a partnership of households may register a private company to operate its agricultural holding. Such a company is not considered an agricultural household, while in fact it may be a family farm belonging to one or more households.

Further details on the distinction between the units in the household and non-household sectors may be found in the System of National Accounts 2008 (SNA 2008).

The agricultural holder is defined as the civil person, group of civil persons or juridical person who makes the major decisions regarding resource use and exercises management control over the agricultural holding operation. The agricultural holder has technical and economic responsibility for the holding and may undertake all responsibilities directly, or delegate the responsibilities related to day-to-day work management to a hired manager.

**Manager of the agricultural holding**

It is necessary to distinguish between the agricultural holder and the hired manager (WCA, §6.19; AGRIS Handbook, p. 109) “the hired manager of the holding is the person who manages an agricultural holding on behalf of the agricultural holder and is responsible for the normal daily financial and production routines of running the holding.” In some cases, holdings whose holders are physical persons may behave as companies and also have a hired manager. In the majority of cases, however, in these holdings, the manager is either the holder or a member of the holder’s family.

### 2.3. SCOPE OF ACTIVITY

The scope of the FT is the same as the scope of the census of agriculture (WCA 2020, §6.22 to 6.25; AGRIS Handbook, p. 101 and annex 1). It includes the following groups as defined under ISIC Rev.4:

- Group 011: Growing of non-perennial crops
- Group 012: Growing of perennial crops
- Group 013: Plant propagation
- Group 014: Animal production
- Group 015: Mixed farming

Other on-farm economic activities, such as fishery, forestry and aquaculture, are considered diversification activities of the farm. However, if a unit engages in other economic activities but has none of the agricultural activities listed above, it is considered out of scope for the purposes of the FT.

However, countries that consider these units agricultural holdings should develop a definition to identify them within their population of agricultural holdings and thus be able to classify them into separate farm types.
2.4. COVERAGE AND THRESHOLD

By concept, the FT is applied to all agricultural holdings within the country. However, in many countries, a group of units that engages in agricultural activity and that mostly belongs to the household sector (although there may also be units belonging to the non-household sector), is excluded from the definition of agricultural holdings (WCA 2020, §6.30 to 6.32; AGRIS Handbook, p. 102). These are units that producing small quantities of food, generally for own consumption, and the cumulated share they constitute of total agricultural activity is marginal (not exceeding 1 or 2 percent of the country’s total agricultural production).

In many national statistics, these units are excluded from agricultural surveys, as it is considered inefficient to collect and produce statistical data on them. As the cut-off criteria are usually related to farm size, the units excluded from the scope of the agricultural surveys may be households or non-household units.

In some countries, the level of self-consumption may also be a cut-off criterion for the units operating in the household sector.

EXAMPLE 1.
In France,1 the units operating in the framework of the family and that consume the entire agricultural production within the family (household), regardless of size, are excluded from the category of agricultural holdings.
However, in the non-household sector, if the unit exceeds a certain size threshold, it is considered an agricultural holding regardless of the level of self-consumption of the agricultural production.

EXAMPLE 2.
In the United States of America,2 a farm is defined as any place from which USD1 000 or more of agricultural products were produced and sold, or normally would have been sold, during the year. If a farm does not reach USD 1 000 in sales, a “point system” assigns dollar values for acres of various crops and heads of various livestock species to estimate a normal level of sales. This point system is also used for farms that normally have sales higher than USD 1 000 but that, in the reference year, present lower sales, for any reason.

In other countries, small units producing only for self-consumption are of great interest. No farm threshold is applied and all units engaging in some agricultural activity would fall within the scope of the agricultural census and agricultural statistics in general.
All units that are defined as agricultural holdings at national level, regardless of the farm thresholds applied, are covered by the FT, including small-scale food producers as defined for the purposes of SDGs 2.3.1 and 2.3.2.
For the purposes of comparison between countries and completeness of statistics, countries that apply a cut-off threshold should be able to estimate at least the number of units with agricultural activity below the threshold and the share they constitute of the total agricultural area utilized (AAU), livestock units and agricultural output of the country.
Countries that do not apply a threshold should develop a definition with which to identify units, within their agricultural holdings population, having marginal agricultural activities.

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1 From the instructions to enumerators relating to the 2010 agricultural census conducted in France; see http://agreste.agriculture.gouv.fr/enquetes/structure-des-exploitations-964/recensement-agricole-2010/methodologie-718/
2 https://www.ers.usda.gov/topics/farm-economy/farm-household-well-being/glossary.aspx#farm
Determination of Farm Typology dimensions and their calculation

In chapter 2, the frame of the FT is defined in terms of unit of observation, scope of activity and coverage (farm threshold). Thus, the agricultural holdings that compose the frame of the FT remain highly diversified and are subjects of classification.

Considering the results of the analyses of existing FTs and the need for an FT with policy relevance, four dimensions for classification are proposed:

1. farm profile, which takes into consideration the legal status of the holder and the purpose of the agricultural production (market integration) of the agricultural holding
2. farm size, which considers different ways to measure the size of the farms, such as land size and economic size
3. commodity specialization, which determines the most important agricultural production activity of the holding, measured in economic terms
4. diversification, defined as the presence of other on-farm economic activities or the share of these activities in the total farm income.
There is no predefined sequence or priority of one dimension compared to the others. The combination of dimensions for the purposes of farm classification depends on the needs of the users. Chapter 4 of these Guidelines describe some of the most frequently used combinations for the purposes of policy analysis. This chapter discusses the definition and classification variables for each dimension, while chapter 4 examines the combination of different dimensions within the building of national FT.
3.1. FARM PROFILE

The farm profile classifies agricultural holdings based on the legal status of the holder and the purpose of the agricultural production (market integration). For the purposes of the FT, the farm profile is a combination of two building blocks:

- household/non-household sector, and
- purpose of the agricultural production (market integration) of the farm.

Countries may apply additional criteria for classification for their national FT purposes.

The breakdown described in figure 2 may be used to classify the agricultural holdings against three levels of detail.

- **Level 1.** Holdings are classified into two groups by the legal status of the holder: (i) holdings whose holder is a civil person or a group of civil persons; and (ii) holdings whose holder is a legal person. This level ensures compatibility with the WCA 2020 classification used in the tabulation of the census results.

- **Level 2.** Holdings are classified into three groups:
  - holdings whose holder is a civil person or a group of civil persons are further classified by purpose of the agricultural production (level of market integration):
    - (i) holdings producing mainly for own consumption and –
    - (ii) holdings producing mainly for sale.
  - Whereas (iii) holdings whose holder is a juridical person are assumed to produce mainly for sale.

This level allows for the identification of commercial farms (groups (ii) and (iii)).

**FIGURE 2. CLASSIFICATION BY FARM PROFILE.**
• **Level 3**: according to country-specific definitions, holdings can be classified further into more disaggregated, homogeneous groups. This level allows for identification of subsistence farms, hobby farms and units below the cut-off threshold, family farms, etc. according to national definitions.

For the purposes of these Guidelines, the classification of agricultural holdings by farm profile at levels 1 and 2 is done using items suggested by the WCA 2020 and that are also used in the AGRIS Core Module: household/non-household sector and purpose of the agricultural production (market integration) of the farm. Levels 1 and 2 should be applied in all countries, using the standardized concept and definitions, for the purpose of international comparison.

Level 3 refers to country-specific contexts, and countries may apply their own definitions to units with marginal agricultural activities, hobby farms and subsistence farms, to further classify farm profiles for the purposes of the country’s policy-relevant farm typology. Household well-being can also be addressed in the country-specific level 3 of the farm profile, considering relevant indicators including the share of total household income consisting in off-farm income, inequality, gender empowerment, etc.

Countries must choose the classification variable that best characterizes the specific national farm profiles at level 3. Examples of variables to be used for these national, more detailed, types are given in chapter 4.3 of these Guidelines, on Farm typology for national purposes.

**Definition of classification variables and calculation for farm profile (levels 1 and 2)**

**V1. Legal status of the agricultural holder**

- This variable allows for the application of level 1 for the classification of agricultural holdings by legal status of the holder.
- This variable can be used directly, as provided in WCA 2020 essential item 0103 – Legal status of agricultural holder (type of holder)
- An example of the question is available in the AGRIS Core Module questionnaire, Part 1.2 – Identification of the holding
- Three main types of holders are defined:
  - one civil person
  - group of civil persons
  - legal person

For typology purposes, agricultural holdings are classified into two classes:

**TABLE 1. CLASSIFICATION OF AGRICULTURAL HOLDINGS BY LEGAL STATUS.**

<table>
<thead>
<tr>
<th>Class</th>
<th>Holdings whose holder is</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Civil person or group of civil persons</td>
</tr>
<tr>
<td>2</td>
<td>Juridical persons</td>
</tr>
</tbody>
</table>

For national purposes, within the legal person status, more detailed types of holders would enable distinction between corporations, cooperatives, non-profit organizations, and institutional households such as religious orders, schools, prisons, etc.
Similar statuses of agricultural holdings, such as entrepreneurs and associations of physical persons, may be treated as physical persons in some countries and as legal persons in others, depending on the national legislation that defines them as legal units. Entrepreneurs are generally physical persons that organize and manage their own enterprise on their own initiative and at their own risk. In some countries, entrepreneurs are registered under a specific law and, although acting as enterprises, they are not considered legal entities. To be able to identify them and analyse them separately, if necessary, in these countries, the variables related to the legal status of the holder and to the agricultural holding include a separate category for entrepreneurs. Often, members of the family of entrepreneurs with agricultural activities are involved as paid or unpaid labour.

**V2. Purpose of agricultural production**

This variable is proposed to measure market integration and refers to the classification at level 2 of the Farm Profile (figure 2).

Market integration is measured as the share of the value of the production placed for sale in the total value of agricultural production (agricultural output). Farms selling 50 percent or more of their production (in monetary terms) are considered to produce mainly for sale, while those selling less than 50 percent are considered to produce mainly for own consumption.

For the purposes of these Guidelines, the following definitions are used:

The *value of agricultural production* or agricultural output is the monetary value of the production from each crop and livestock, including crop residues and animal by-products on the farm, covering all types of use: sales, production used fresh or processed for own consumption in the household, production used for seed, feed or other farm use, production given as a gift or used to pay labour or rent and changes in stocks.

*Sales* include selling for cash and exchange for other produce (barter). Other disposals, such as payment of labour or gifts, should not be considered when assessing the main purpose of production. For the purposes of calculating the share of sales in total agricultural production, it is recommended to value both quantities of production and sales at producer (farm-gate) price.

Data on the purpose of production are usually collected for agricultural holdings associated with individual households or groups of individual households. Agricultural holdings run by juridical persons (enterprises, cooperatives, etc.) are generally commercial farms and are classified directly as producing mainly for sale. However, some countries may also wish to collect this information for particular types of institutional holdings (schools, religious institutions, etc.), as these units may produce for own consumption.

**EXAMPLE 1.**

For France’s Agricultural Census 2010, the legal status of the agricultural holdings is detailed to 11 different categories, to collect information about the great variety of legal forms under which the agricultural activity is performed: 1) individual holding (of a physical person); 2) a joint farming association (except in the milk sector); 3) a joint farming association (in the milk sector); 4) a farm with limited liability; 5) a grouping; 6) a dairy association of civil persons; 7) other association of civil persons; 8) commercial company; 9) company for common cropping; 10) other legal persons; 11) other physical persons. These categories are then aggregated to agricultural holdings of physical and legal persons.
The WCA 2020 essential and frame item 0107 – Main purpose of production of the holding allows for immediate classification into two groups. The more detailed classification suggested by the WCA 2020, §8.1.19 allows for classification into four groups. An example of the question may be found in the AGRIS Core Module questionnaire, Part 1.3 – Agricultural activity.

The approach used by countries may differ depending on the specific situation. In some cases, the value of the production and the share of self-consumption and of sales can be measured exactly. In other cases, the opinion of the agricultural holder or manager can be collected.

Farmer opinions are easy to collect and reflect the usual situation on the farm. They do not consider specific situations in the reference year. However, farmer opinions are usually not based on calculation of agricultural output and share of sales but rather on farmer perceptions, and may not correspond to the actual situation. As an example, if the selling of agricultural products is the main source of income for the household, the perception of the farmer may be that the farm is producing primarily or mainly for sale, even if the share of sales in the total value of production is insignificant.

On the other hand, estimation based on the share of the value of sales in the total agricultural output of the farm corresponds to the real situation in one particular year (the reference year for data collection). For climatic, economic, social, etc. reasons, agricultural output and the share of the sales may vary significantly from one year to another. Thus, estimation based on real calculations may differ from the usual situation. Furthermore, the share of the value of sales at farm level is not directly available, as it is usually not collected directly from farmers. It requires the collection of information on the quantities of production and volumes of sales, and additional computation of the total agricultural output of the farm.

The choice of method to use to obtain this variable depends on the availability of data in the country and on the data quality. However, including a question for farmers on the main purpose of their agricultural activity appears to be more easily applicable in the majority of the countries.

For the purposes of these Guidelines, holdings are classified into two groups:

### TABLE 2. CLASSIFICATION OF AGRICULTURAL HOLDINGS BY PURPOSE OF AGRICULTURAL PRODUCTION (MARKET INTEGRATION).

<table>
<thead>
<tr>
<th>Class</th>
<th>Holdings that</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Produce mainly for own consumption</td>
</tr>
<tr>
<td>2</td>
<td>Produce mainly for sale</td>
</tr>
</tbody>
</table>
When crossing the two building blocks—legal status of agricultural holder and purpose of the agricultural production (market integration) of the farm—the following classification per farm profile is defined:

### TABLE 3. CLASSIFICATION OF AGRICULTURAL HOLDINGS BY FARM PROFILE.

<table>
<thead>
<tr>
<th>Class</th>
<th>Level one</th>
<th>Level two</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Civil person or group of civil persons</td>
<td>Producing mainly for own consumption</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Producing mainly for sale</td>
</tr>
<tr>
<td>2</td>
<td>Juridical person</td>
<td>Producing only for sale</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Includes specific holdings of research institutes, hospitals, prisons, etc. that usually produce mainly for own consumption</td>
</tr>
</tbody>
</table>

**Main data sources for classification variables related to farm profile**

The main data source for the initial classification of farms according to their farm profile is a farm-level survey (an exhaustive agricultural census or a sample survey such as AGRIS). The Core Module of AGRIS may provide an annual estimation of the number of farms and the structural and economic characteristics for each farm profile.

Often, annual agricultural surveys do not represent the entire population of agricultural holdings and other sources will have to be identified to complete the population. For example, a country may carry out an annual survey of households engaged in rain-fed agricultural activities. To complete the population, data sources for the commercial farms and farms engaged in other agricultural activities (livestock, irrigated agriculture, etc.) must be identified.

If a country carries out a separate agricultural survey for commercial farms, this survey must be used to complete the total population of agricultural holdings.

Household surveys may be used if they have an agricultural component, according to which an estimation of the importance of own consumption and sales may be asked for during the survey.

Administrative sources such as registers may be a reliable source for the estimation of the number of farms per farm profile or to complete missing data for a particular farm profile.
3.2. FARM SIZE

Farm size may be the most commonly used classification criterion when presenting and analysing farm data. The tabulation plans of any agricultural survey usually include an aggregation of results by size classes of agricultural area, livestock units or labour input. Size thresholds and classifications are often applied to agricultural holdings for statistical or policy purposes.

As mentioned above, farm size can be measured using different variables, according to the objectives and available data. The two most common variables, which will also be used for the definition of farm size for the FT, are based on the physical size and the economic size of the agricultural holding.

**Physical farm size**
The land area is a straightforward measurement of physical farm size. It is easily obtained from most agricultural surveys. Its drawback is that it does not account for the size of activities that are not directly measured in terms of land units, such as livestock breeding, cultivation of scattered trees, or mushrooms. Furthermore, the different crop characteristics and intensification cannot be measured.

**Economic farm size**
A more advanced measurement of farm size is economic size, which generally measures the total agricultural production of the farm in economic terms. Its advantage lies in the fact that it captures all agricultural activities (not only those linked to land), differences in crop characteristics and intensification. The disadvantage is that it requires more detailed sets of agricultural statistical data related to farm agricultural output and sales, yields, prices, technical coefficients per crop type and livestock category at certain aggregated levels (national, regional, local), etc. These data are often sparse or of low quality, and are less meaningful in very small farms.

In many countries, economic size is calculated as the value of production, sales, revenue or income from agricultural activities. This data is usually available in the accounts of the commercial farms; however, small farms would have to be visited many times during the year to collect the information required to estimate their economic indicators. Often, this data is not available or is of bad quality, and statisticians may apply procedures for data imputation to address the data shortcomings. Furthermore, the same farm may present different results from one year to another simply because of the different climate and market conditions. These results do not reflect particular changes in the farm structure or management practice, and would be difficult to be explained by such changes.
Standardized coefficients (such as standard output in the European Union, or EU, and the point system in the United States of America) that measure the economic size of agricultural holdings (agricultural output or volume of sales) are used in some countries, instead of calculating the real values of production, sales, revenue or income from agricultural activities every year. This approach has the advantage of being relatively easier to implement as it requires the calculation of average values at regional or national level. To estimate farm agricultural output for each agricultural holding, it is necessary to know only its area of crops and number of livestock by category. The standard coefficients are usually calculated as an average of three to five years, which smoothens the annual fluctuations of yields and prices. As the same standard coefficients are used for several years, it is easier to explain the changes that occur in the farm. It is possible to observe and analyse the variability and changes in time in the levels of sales, revenue, income, etc. within the same farm size. The drawback of this approach is that it is data-intensive. The calculation of the average or standard coefficients requires data on productivity and prices of a long list of crop and animal products, for three to five consecutive years.

For the purposes of the FT, these Guidelines propose to measure farm size using:
- the AAU of the holding (when other data is not available); and
- the economic size of the holding, measured by its total agricultural output, using the average output approach (when data of national or regional average yield per hectare, tree or head and prices are available).

Some of the main terms that will be used to define economic farm size are defined here for the purposes of these Guidelines.

The *total agricultural output* of the agricultural holding is the value of all agricultural production of the holding expressed in monetary terms. The total agricultural output covers all outputs from crop and livestock activities, including main crop products, crop residues, livestock and animal products. Agricultural output must be valued at producer (farm-gate) price. The value of agricultural products processed on the farm (cheese, olive oil, jam, etc.) is not included.

The *producer price* is the price received by the farmer at the farm gate. This price excludes transport costs and margins, even if the farmer transports the goods from the farm to the market. Often, producer price is not available. In this case, the price at the first point of sale or the average market price can be used. The latter must be reduced by the estimated transport and marketing costs.

The *crop output* of the agricultural holding is the value of all crop commodities produced for a reference period of 12 months on the farm, including crop residues, if they are used or sold. Production from kitchen gardens and scattered trees is also valued and included in crop output, if it is important in the individual country context.

The *livestock output* of the agricultural holding is the value of all animal products produced over a reference period of 12 months from each type of livestock kept on the farm. Livestock output covers livestock production (animal off-take), animal growth (changes in livestock value at the end and at the beginning of the year), animal products (milk, eggs, wool, honey, etc.) and receipts from contracted animals.

The *average output per hectare/head* is the monetary value of production per hectare of crop type or head of livestock category, calculated at national or regional level. To reduce the influence of climate and market fluctuations, when data is available, it is recommended to calculate the average output per hectare/head as an average of the annual output for five consecutive years. Average output per hectare/head is used to value the agricultural production of agricultural holdings based on their area of crops and number of livestock.
Classification variables: definition and calculation

V3. AAU of the holding

For the typology purposes, it is proposed to use the holding’s AAU instead of the total area of the holding, which is generally used. The AAU includes land under temporary crops, meadows and pastures, fallow land and permanent crops, and represents the land that is actually used for agricultural production. On the other hand, total land includes non-productive land such as area of buildings and farmyards, unutilized agricultural land, bodies of water, etc. and land used for other on-farm economic activities such as forests and other wooded land.

This variable can be calculated directly from the AGRIS Core Module (Section 3, Q 11) or the WCA 2020 essential and frame item 0202 – Area of holding according to land use types. The AAU can be calculated as the sum of the area of classes of land use from 1 to 5 Agricultural land (see WCA 2020, annex 8, p. 181):

\[
AAU = LU1 + LU2 + LU3 + LU4 + LU5
\]

where
- LU1 is the land under temporary crops of the agricultural holding
- LU2 is the land under temporary meadows and pastures of the agricultural holding
- LU3 is the land temporarily fallow of the agricultural holding
- LU4 is the land under permanent crops of the agricultural holding
- LU5 is the land under permanent meadows and pastures of the agricultural holding

If these detailed classes are not available and the total AAU cannot be computed, the total area of the holding can be considered (item 0201, WCA 2020) as a proxy.

When defining the size classes, it is necessary to create a size class that includes agricultural holdings with land size equal to zero, to be able to identify landless agricultural holdings that engage in other agricultural activities, such as livestock breeders using only pastures on common land.

The following 12 size classes, harmonized with the tabulation classes for total area of the holding used for the WCA 2020, can be considered:

**TABLE 4. CLASSIFICATION OF HOLDINGS BY AAU SIZE (HA).**

<table>
<thead>
<tr>
<th>Class</th>
<th>Holdings with</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 ha of AAU</td>
</tr>
<tr>
<td>2</td>
<td>greater than 0 ha and less than 1 ha</td>
</tr>
<tr>
<td>3</td>
<td>equal to or greater than 1 ha and less than 2 ha</td>
</tr>
<tr>
<td>4</td>
<td>equal to or greater than 2 ha and less than 5 ha</td>
</tr>
<tr>
<td>5</td>
<td>equal to or greater than 5 ha and less than 10 ha</td>
</tr>
<tr>
<td>6</td>
<td>equal to or greater than 10 ha and less than 20 ha</td>
</tr>
<tr>
<td>7</td>
<td>equal to or greater than 20 ha and less than 50 ha</td>
</tr>
<tr>
<td>8</td>
<td>equal to or greater than 50 ha and less than 100 ha</td>
</tr>
<tr>
<td>9</td>
<td>equal to or greater than 100 ha and less than 200 ha</td>
</tr>
<tr>
<td>10</td>
<td>equal to or greater than 200 ha and less than 500 ha</td>
</tr>
<tr>
<td>11</td>
<td>equal to or greater than 500 ha and less than 1 000 ha</td>
</tr>
<tr>
<td>12</td>
<td>equal to or greater than 1 000 ha</td>
</tr>
</tbody>
</table>
Depending on the distribution of the AAU and the number of holdings in the country, some classes could be divided into several subclasses (for example, class 2 – AAU > 0 and less than 2 ha – can be further broken down).

V4. Economic size of the holding
For typology purposes, the total agricultural output of the holding based on average output per hectare of agricultural crop and per head of livestock category is used to measure the economic size of agricultural holdings.

To calculate economic size per agricultural holding, it is necessary to possess (i) some structural data at farm level (area of crops, number of livestock) from a survey to which the FT will be applied and (ii) the average output per hectare or per head calculated at aggregated (national or regional) level from various available data sources.

i. The necessary structural data is set out in the WCA 2020 essential items and the AGRIS Core Module questionnaire, parts 3.1 and 4.1:
- Area of temporary crops grown (for each temporary crop type) regardless of the quantities harvested,
- Area of permanent crops in compact plantations (for each permanent crop type)
- Number of permanent crop trees in scattered plantings (for each tree species)
- Type of livestock system
- Number of animals per livestock type
- Number of animals per category (e.g. AGRIS, Core Module, section 4, part 4.1.2 Bovine cattle, Q08a: dairy cows, other cows, cattle less than one year old, other cattle)

ii. The average output per hectare or per head can be calculated using different sources of data existing in the countries, such as economic surveys and price statistics. As the level of production is influenced by the region, the average output could be calculated per region or agro-ecological zone (AEZ), where data is available. The average output per hectare or per head at aggregated level is calculated on the basis of annual output for three to five years. Generally, computing the annual output consists of multiplying the physical volume of the annual production from each crop and livestock, in terms of farm-gate price, for the relevant year. The literature and country practices provide various examples that countries may use. These Guidelines present the basic methods and calculations. More sophisticated calculations are available; however, they require more detailed data and should be applied consistently for all commodities (such as the calculation methods applied in EU countries: for further information, see http://fadn.pl/wp-content/uploads/2016/07/RICC-1500-rev-4-Typology-Handbook_EN.pdf). However, the main principles described below should be followed for all calculation methods.
- The annual output covers crop and animal production per unit (ha, tree or head) within a 12-month period.
- The annual output values the quantity of production of main products from crops (grains, seeds, roots, flowers, fruits, vegetables, etc.), crop residues (straw, stover, leaves, etc.) and main products from livestock (milk, meat, eggs, wool, honey, etc.).
- The production includes all kinds of use – sales, barter, donation, farm use, consumption on the household, changes in stocks.
- The production excludes losses on the field (including stealing) and those occurring during transportation from the field to the farm. The losses that occur after harvest and during storage are included in the total production.
- The production is valued at the producer (farm-gate) price in local currency units (LCU), which can later be converted in Purchasing Power Parity Dollars (PPP $) for international comparison purposes.
If the producer price for a given commodity is not available, the price of a similar commodity can be used. If only the market price is available, it can be reduced to the farm-gate price by applying a coefficient (for example, by using expert opinion) to deduct the transport and marketing costs.

The annual agricultural output of an agricultural holding may vary significantly because of extreme climate and market conditions. Thus, the economic size of the farm measured in terms of its annual agricultural output would be different from one year to another, even without any other change in the farm structure and functioning. To minimize these effects, it is recommended to calculate an \textbf{average output per hectare and per head} for three to five successive calendar years or to use one year that is considered “normal” in terms of the climate and market conditions at national or regional level. This average output is then used to calculate the economic size of the farm.

The level of production is also highly correlated to the production system (grazing, mixed or industrial system for livestock breeding, irrigated, non-irrigated or flooded system for cropping, etc.) and the size of the farm. The average output can be calculated as a single weighted average, or separately, per production system, if structural data per agricultural holding is also collected separately (area of irrigated and non-irrigated crops, number of livestock bred intensively and extensively, etc.). Similarly, the two sets of average outputs per hectare and per head could be calculated separately, one for the household sector and one for the non-household sector, where data at regional and national level is available for both, and if they differ significantly. When determining farm size, the two sets of average outputs shall be applied to the relevant agricultural holdings from each subpopulation.

For the purposes of the FT, the economic size (ES) of an agricultural holding is equal to the total agricultural output from all agricultural activities within a 12-month period. It is obtained by multiplying its structural data on the farm (area of crops per crop type and number of heads per livestock category) by the relevant average output per hectare or head. In countries where production from scattered trees is considered important and the number of trees per species is collected, the total agricultural output would also include the multiplication of the number of scattered trees per species and the relevant average output per tree.

\begin{equation}
ES = \text{Total Agricultural Output} \\
= \sum_{i=1}^{I} (N1_{X_i} \cdot A1_{X_i}) + \sum_{i=1}^{I} (N2_{Y_i} \cdot A2_{Y_i}) + \sum_{i=1}^{I} (N3_{Z_i} \cdot A3_{Z_i})
\end{equation}

where

- $N1_{X_i}$ is the number of hectares of crop $X_i$ cultivated by the agricultural holding
- $N2_{Y_i}$ is the number of scattered trees of species $Y_i$ cultivated by the agricultural holding
- $N3_{Z_i}$ is the number of heads of livestock category $Z_i$ raised by the agricultural holding
- $A1_{X_i}$ is the average output from crop $X_i$ per hectare
- $A2_{Y_i}$ is the average output from scattered tree of species $Y_i$ per tree
- $A3_{Z_i}$ is the average output from livestock type or category $Z_i$ per head

The total agricultural output can be broken down into crop and livestock output.

\begin{equation}
\text{Crop output} = \sum_{i=1}^{I} (N1_{X_i} \cdot A1_{X_i}) + \sum_{i=1}^{I} (N2_{Y_i} \cdot A2_{Y_i})
\end{equation}

\begin{equation}
\text{Livestock output} = \sum_{i=1}^{I} (N3_{Z_i} \cdot A3_{Z_i})
\end{equation}
The average output per hectare, tree or head is not the observed result of each holding but rather an average calculated on an aggregated level – regional or national. Thus, the economic size measured in total agricultural output of the holding does not represent its actual production results. Rather, it should be seen as a standardized production potential of the holding. Two agricultural holdings from the same region having the same area and types of crops and the same number of types and categories of livestock will have the same economic size, regardless of their other holding characteristics.

At national level, countries have different understandings of small, medium and large farms, depending on the farm structures in the country. As mentioned before, some countries apply thresholds to exclude farms from the smallest farm size classes with a marginal cumulative contribution to the country’s total agricultural production. On the other hand, in other countries, these farm size classes may be even considered average-size. It is difficult to have compatible classifications of economic farm size at national and international level, also because of the different currencies used in the world. For the purposes of international classification, the economic size calculated and expressed in LCU must be converted to PPP $. At national level, the classes must be expressed in LCU for better communication and use by local users.

To ensure international coherence, these Guidelines propose 12 economic size classes defined by the economic size of the holding, expressed in PPP $. For the purposes of the national FT, countries may use this classification converted into LCUs or may define their own classes in LCUs. Thus, each farm would belong to a given size class based on LCUs within the national FT for national statistical and policy needs, and to another size class expressed in PPP $ for international comparison purposes only.

**TABLE 5. CLASSIFICATION OF HOLDINGS BY ECONOMIC SIZE.**

<table>
<thead>
<tr>
<th>Class</th>
<th>Holdings with economic size:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Equal to* or greater than 0 PPP $ and less than or equal to 1 000 PPP $</td>
</tr>
<tr>
<td>2</td>
<td>greater than 1 000 PPP $ and less than or equal to 2 000 PPP $</td>
</tr>
<tr>
<td>3</td>
<td>greater than 2 000 PPP $ and less than or equal to 5 000 PPP $</td>
</tr>
<tr>
<td>4</td>
<td>greater than 5 000 PPP $ and less than or equal to 10 000 PPP $</td>
</tr>
<tr>
<td>5</td>
<td>greater than 10 000 PPP $ and less than or equal to 20 000 PPP $</td>
</tr>
<tr>
<td>6</td>
<td>greater than 20 000 PPP $ and less than or equal to 50 000 PPP $</td>
</tr>
<tr>
<td>7</td>
<td>greater than 50 000 PPP $ and less than or equal to 100 000 PPP $</td>
</tr>
<tr>
<td>8</td>
<td>greater than 100 000 PPP $ and less than or equal to 250 000 PPP $</td>
</tr>
<tr>
<td>9</td>
<td>greater than 250 000 PPP $ and less than or equal to 500 000 PPP $</td>
</tr>
<tr>
<td>10</td>
<td>greater than 500 000 PPP $ and less than or equal to 750 000 PPP $</td>
</tr>
<tr>
<td>11</td>
<td>greater than 750 000 PPP $ and less than or equal to 1 000 000 PPP $</td>
</tr>
<tr>
<td>12</td>
<td>greater than 1 000 000 PPP $</td>
</tr>
</tbody>
</table>

* Holdings with an economic size equal to 0 PPP $ are those agricultural holdings whose agricultural production could not be valued (for example if the output for the specific production in the holdings is not valued).
Below, methods for calculating the average output from crops, scattered trees and livestock are described, with examples.

**A1\_Xi – Average output from crop per hectare**

Countries must establish a list of crops for which the average output will be calculated. The crop list must be within the scope of the agricultural census as defined in annex 2 of the WCA 2020 and compatible with the WCA 2020 crop types. AGRIS also refers to the Indicative Crop Classification, version 1.1 (see annex 1-2, AGRIS Handbook). As a minimum, the average output must be calculated for the eight main crop commodities defined by the Minimum Set of Core Data (MSCD) of GSARS (World Bank, FAO & UN, 2011): wheat, maize, barley, sorghum, rice, sugar cane, soybean and cotton, if they are relevant for the country. Countries may also decide to include other major crops.

The average output from crop per hectare A1\_Xi values the production from the hectare within a 12-month period, usually the crop year. Some aspects of crop production need special attention when calculating A1:

- (i) more than one product from the same crop may be produced and used (main product and crop residues);
- (ii) more than one crop may be grown on the same parcel of the farm, one after the other (successive crops) or simultaneously (associated crops); and
- (iii) permanent crops are grown for more than five years and some, such as fruit crops, do not start producing fruits from the first year of plantation.

Further details on the definitions and treatment of these specific crop production aspects are given below.

**Main crop products and crop residues**

The gross production per hectare from each crop includes the production from main crop products and crop residues, if the crops residues are sold or used on the farm. The main or principal product from a given crop is the product (grain, root, fruit, leaves, etc.) with a higher economic value. It is usually harvested from all area on which it is grown and is either sold or used raw, or processed on the farm for human consumption or feed. In contrast, the crop residue or secondary product (straw, stover, leaves, etc.) may be left on the field, burned, buried, etc. or used as fodder, litter or sold. In some countries, the main product and crop residue from some crops are considered joint products, as crop residues are an important source of animal feed and farmers may value them as much as the other products. Regardless of the definition used, the production that is left on the field should not be valued when calculating the average output. An example of main crop products and residues is given here:

**TABLE 6. EXAMPLE OF MAIN PRODUCTS AND RESIDUES FOR COMMON CROPS.**

<table>
<thead>
<tr>
<th>Crop type</th>
<th>Main/principal product</th>
<th>Residue/secondary product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals (wheat, barley, millet, sorghum, etc.)</td>
<td>Grain</td>
<td>Straw</td>
</tr>
<tr>
<td>Maize for grain</td>
<td>Grain</td>
<td>Stover</td>
</tr>
<tr>
<td>Maize for green fodder</td>
<td>Green mass</td>
<td>-</td>
</tr>
<tr>
<td>Beans</td>
<td>Dry beans</td>
<td>Stems, leaves and seed pods</td>
</tr>
<tr>
<td>Ground nuts</td>
<td>Nuts</td>
<td>Stems, leaves and seed pods</td>
</tr>
</tbody>
</table>
Successive crops
As mentioned above, the average output per hectare is calculated on an annual basis. In the case of crop production, the crop year is usually considered the reference period. Some crops have a shorter vegetation period, and in many countries, are grown as successive crops. This means that the same crop or more than one crop are sown and harvested consecutively within the same crop year on the same parcel. One of the crops is usually considered the main crop. As a rule, the main crop is the cash crop that has the longest vegetation period within the crop year. If there is no cash crop, the main crop is the food crop with the longest vegetation period within the crop year. The growing of successive crops on the same area before or after the main crop within the crop year is a standard practice in many countries, and the production from successive crops must also be valued. The data collection activities on the area of successive crops differs between countries and according to the survey objectives. In some cases, each crop sown and harvested during the reference year is recorded with the relevant area, regardless of whether it is a crop from the first, second, etc. harvest (see AGRIS Core Module, Section 3). In other cases, only the area of the main crop is recorded to calculate the total AAU.

Associated crops
In the case of associated crops, two or more crops are grown on the same parcel and at the same time. A classic example is the growing of “three sisters”, where maize, beans and squash are grown together; however, an association of crops may also be created with permanent and temporary crops, such as fruit trees and cereals. Data collection and analysis for associated crops differs between countries and between crop association cases. In some cases, one of the crops could be considered the most important, and the total area under the associated crops is recorded under this crop (this approach is used when one of the crops is a permanent crop, for example). In other cases, the crops are considered joint products from the same parcel and the area is distributed pro rata between associated crops (as in the case of recording area under the “three sisters”). Finally, a mixture of crops in which the seeds were already mixed during sowing is considered one mixed crop category, and the area of the parcel is recorded thereunder (mixed cereals, mixed beans, etc.).

Countries must set and apply clear rules for recording area under successive and associated crops, as they will reflect on the method of calculation of the average output per hectare. Examples of calculation of average output considering the use of crop residues and the growing of successive or associated crops are provided further below.

Permanent crops
Permanent crops are grown either in compact plantations or as scattered trees. Countries may apply different definitions to distinguish between the two.

The size of compact plantations can be measured in terms of ha and of number of trees, and the area is included in the total AAU. Therefore, the average output per hectare from different permanent crops grown in compact plantations can be calculated as an average per hectare of plantation. Some permanent crops (such as fruit trees) do not produce immediately after planting. The young plantations of the agricultural holdings, however, must be valued in terms of the average output as they represent the holdings’ potential capacity. The average output per hectare of plantation is applied to the total area of the plantation, including area in production and young plantations. Thus, AI for permanent crops must account for this non-productive time and is corrected by a coefficient of use that reflects the period in production of the plantation out of the total cultivation period. The coefficient is calculated as the number of years of harvest divided by the number of years of cultivation (see example 4 of AI calculation for permanent crops, below).
Proposed calculation methods

Based on data availability, three standards are proposed for the calculation of $A1_{Xi}$:

- the basic standard: the average output from crops measures only the production from the main crop product
- the silver standard: the average output from crops measures the production from the main crop product and the utilized production from crop residues
- the gold standard: in addition to the silver standard, the average output from crops reflects the different production systems or is calculated separately. If data on different practices in growing the same crop (for example, irrigated or non-irrigated; household-sector or big commercial farms) are available (area, yields), the weighted average output from the crop or separate outputs for each different practice can be calculated.

Necessary data at national or regional level for each crop for which $A1$ shall be calculated, are:

- cultivated area of main crop per year
- total production of crops (main crop products and crop residues) per year
- average yield per hectare of main products from crops per year
- average yield per hectare of crop residues from crops and share of use (on the farm and sale) per year, for used residues only
- average yield per hectare of successive crops per year and area of successive crops, or share of cultivated area of the main crop covered by the successive crop;
- average prices at farm-gate per crop product, including crop residues (for used residues only) per year.

The annual output $A1^t_{Xi}$ for year $t$ per hectare of crop $Xi$ can be calculated as follows:

\[
A1^t_{Xi} = Yield_{ha}^t_{Xi} \times Farm\text{-}price_{Xi}^t
\]

The average output $A1_{Xi}$ is calculated as the average of the annual outputs per hectare of crop $Xi$ for three to five consecutive years.

\[
A1_{Xi} = \frac{\sum_{t=1}^{5} A1^t_{Xi}}{5}
\]

where $t$ is number of consecutive years (three or five)

The example below illustrates the calculation following the basic standard (only the main crop product will be considered).

**EXAMPLE 1.**

Data from Ecuador\(^1\) on average yield from maize and annual producer price for 2010–2014 is downloaded from FAOSTAT and presented in the first two columns of the table below. The annual output per hectare of maize for each year is calculated in the third column. The average output per hectare of maize ($A1_{maize}$) for a five-year period is estimated as being USD 827.40 /ha.

---

\(^1\) Source: FAOSTAT.
To have more a precise and exhaustive estimation of the production capacity, the silver and gold standards also require the calculation of average output to include the value of used crop residues. The $A1_{X}$ per hectare can be increased by the production from crop residues and calculated separately per production system, if it is significant in the country or region (example 3 below).

2 Source: Central Statistical Office of Zambia, Post-harvest Survey.

<table>
<thead>
<tr>
<th>Year</th>
<th>Yield t/ha</th>
<th>Producer price USD/t</th>
<th>A1 USD/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>2.235</td>
<td>380</td>
<td>849.3</td>
</tr>
<tr>
<td>2011</td>
<td>1.667</td>
<td>250</td>
<td>416.8</td>
</tr>
<tr>
<td>2012</td>
<td>2.732</td>
<td>315.9</td>
<td>863.0</td>
</tr>
<tr>
<td>2013</td>
<td>2.37</td>
<td>361</td>
<td>855.6</td>
</tr>
<tr>
<td>2014</td>
<td>3.434</td>
<td>335.6</td>
<td>1152.5</td>
</tr>
</tbody>
</table>

A1maize = 827.4

It is clear that 2011 and 2014 are extreme years with very low and very high results. If the five-year average cannot be calculated, a year corresponding to the normal situation would be used, such as 2010, 2012 or 2013. A1 is calculated in the same way for all temporary crops, regardless of whether they are grown as single crops during the crop year, including mixed crops, associated crops or successive crops, provided that the area under each crop is recorded separately for each production cycle within the reference period.

EXAMPLE 2.

In the case of successive crops, it is important to know the area to which the average output $A1$ will be applied. In Zambia, mixed beans are grown as successive crops. Because of the short vegetation period, there are usually three harvests per crop year (or three production cycles on the same physical area). The annual yield from 1 ha of mixed beans with three harvests is estimated as 0.6 t/ha/year for a given reference year $t$. The average yield per harvest would be equal to 0.6 t/ha divided by three harvests, or 0.2 t/ha/harvest. The price of mixed beans is 5 800 Zambian kwacha (ZMW/t). The annual output for the year $t$ A1 mixed beans can be calculated for:

- physical area (area on which the mixed beans are sown and harvested throughout the crop year is counted only once)

- $A1_{mixed beans/year}$ = yield per hectare per year * farm-gate price = 0.6 t * 5800 ZMW/t = 3480 ZMW

- harvested area (total area on which the mixed beans are sown and harvested, the physical area is counted as many times as there are mixed beans production cycles during the crop year)

  $A1_{mixed beans/harvest}$ = yield per hectare per harvest * farm-gate price = 0.2 t * 5800 ZMW/t = 1160 ZMW

In the Post Harvest Survey of Zambia, the practice is to collect the total area sown and harvested during the year (in our example, the sum of area of a given crop for three harvests). Thus, if a farm reported having 3 ha of mixed beans during year $t$, the $A1_{mixed beans/harvest}$ has to be used. This is also the practice for successive crops in many other countries.

However, in some countries or surveys, data may be available only for the physical area (for example, 1 ha on which successive crops are grown through the crop year). In such cases, the $A1$ should be calculated per year, covering all harvests and different crops grown during the crop year. Thus, in the example of mixed beans above, either $A1_{mixed beans/year}$ or the $A1_{mixed beans/harvest}$ multiplied by the number of harvests should be used, depending on the data available.
EXAMPLE 3.
In one country, it is estimated that approximately 80 percent of the straw from the areas grown with wheat is used on the farm or sold, while for the 20 percent of remaining wheat area, the crop residues remain on the fields. In this case, the wheat is the main or principal crop product and the straw is a crop residue. The five-year average of the yield and the average farm-gate price for wheat and straw at national level are presented in the table below. The average output per hectare of wheat \( A_{1_{\text{wheat}}} \) for a five-year period is estimated as USD 904/ha, of which USD 872 are from the wheat as main product, and USD 32 from the used straw from wheat as residues.

<table>
<thead>
<tr>
<th>Crop product</th>
<th>Yield</th>
<th>Producer price</th>
<th>Use</th>
<th>A1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>unit</td>
<td>USD/unit</td>
<td>%</td>
<td>USD/ha</td>
</tr>
<tr>
<td>wheat</td>
<td>t/ha</td>
<td>4</td>
<td>100</td>
<td>872.00</td>
</tr>
<tr>
<td>straw</td>
<td>n/ha</td>
<td>40</td>
<td>80</td>
<td>32.00</td>
</tr>
</tbody>
</table>

As a basic standard, \( A_{1_{\text{wheat}}} \) must include the production from wheat only, while as a silver standard, it can be increased by the utilized production from crop residues (straw). Note that the share of use for wheat as main product is 100 percent and for the straw is 80 percent, as the rest remains unused on the fields. As a gold standard, the wheat production can be broken down by production system.

EXAMPLE 4.
The example of the calculation of \( A_{1_{\text{apple plantation}}} \) for Bulgaria uses the official price statistics and technical coefficients for the number of years of cultivation and harvest from expert estimates.

<table>
<thead>
<tr>
<th>Year</th>
<th>Yield</th>
<th>Producer price</th>
<th>Year of harvest</th>
<th>Year of cultivation</th>
<th>A1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t/ha</td>
<td>BGN/t</td>
<td>number</td>
<td>number</td>
<td>BGN/ha</td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d</td>
<td>e=a<em>b</em> (c/d)</td>
</tr>
<tr>
<td>2008</td>
<td>7.242</td>
<td>1063</td>
<td>24</td>
<td>29</td>
<td>6371.0</td>
</tr>
<tr>
<td>2009</td>
<td>8.205</td>
<td>707</td>
<td>24</td>
<td>29</td>
<td>4800.8</td>
</tr>
<tr>
<td>2010</td>
<td>8.320</td>
<td>812</td>
<td>24</td>
<td>29</td>
<td>5591.0</td>
</tr>
<tr>
<td>2011</td>
<td>8.264</td>
<td>599</td>
<td>24</td>
<td>29</td>
<td>4096.7</td>
</tr>
<tr>
<td>2012</td>
<td>6.696</td>
<td>518</td>
<td>24</td>
<td>29</td>
<td>2870.5</td>
</tr>
</tbody>
</table>

\( A_{1_{\text{apple plantation}}} = 4746.0 \)

---

3 Source: Ministry of Agriculture and Foods of Bulgaria, Agrostatistics Department.
Calculation of weighted average output per hectare of aggregated land category

If limited data is available for yields and prices, the countries may prefer to calculate one weighted average output of 1 ha of an aggregated land category such as Agricultural Area Utilised (AAU), temporary crops, vegetables, permanent crops, etc. An example of calculation of weighted average output per hectare of temporary crops is given below in this chapter.

The average output per hectare of agricultural area can be calculated as the weighted average per hectare of AAU or per hectare of a group of crops from the same land category. This approach can be used when the farm-level structure data on the crop area is not available but the total AAU or the area per main land categories of the holding is known. It can be also used to compute the average output of successive crops (such as vegetables) or groups of crops for which the area per crop is usually not collected (kitchen gardens, other cereals, other root crops, etc.)

- Often, the total AAU of the agricultural holding is collected and even measured, while the detailed area per crop is not available or is of poor quality. In such cases, the average output per hectare of AAU or per aggregated categories of land use types can be calculated as a more precise proxy of the average output from crops of the agricultural holdings.
- When applying the average output per hectare of aggregated categories of agricultural area, it is assumed that the structure of the crop areas in the agricultural holdings corresponds to the structure of the crop areas at regional or national level. As an example, two holdings having an AAU of 2 ha would have the same output from crops based on weighted average output A1 per hectare of AAU, regardless of the crops they grow on their farms.
- Only the area, production and price data at regional or national level for a few main crops within the land category are used. Other crops for which the necessary data is not available are excluded from the calculation of the weighted average. However, the weighted average is applied to the total area of the land category.
- The average output from agricultural area per hectare is calculated as the weighted average from the crops grown at national or regional level. For further simplification, and if data is not available, the A1Xi of the first four or five most important crops can be included in this calculation.
- If possible, the weighted A1 should be calculated per groups of crops from the same land category: temporary crops, vegetables, fodder crops, etc.

\[
A1_{AAU} = \sum_{i=1}^{l} (s_{X_i} \cdot A1_{X_i})
\]

where

\( A1_{AAU} \) is the average output per hectare of AAU
\( A1_{X_i} \) is the average output per hectare of crop \( X_i \)
\( s_{X_i} \) is the share crop \( X_i \) in the total AAU

AND

\[
\sum_{i=1}^{l} s_{X_i} = 1
\]
TABLE 7. EXAMPLE OF CALCULATION OF WEIGHTED A1 PER HECTARE OF AAU.

<table>
<thead>
<tr>
<th>Product</th>
<th>Agricultural Area Utilised (AAU) (ha)</th>
<th>Total production (kg)</th>
<th>Production per hectare (kg/ha)</th>
<th>Price (USD/kg)</th>
<th>A1 (USD/ha)</th>
<th>Share in the total AAU (%)</th>
<th>Weighed output per hectare of AAU (USD/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>crop1</td>
<td>2 000</td>
<td>2 000 000</td>
<td>1 000</td>
<td>0.5</td>
<td>500</td>
<td>24%</td>
<td>122.0</td>
</tr>
<tr>
<td>crop2</td>
<td>5 000</td>
<td>25 000 000</td>
<td>5 000</td>
<td>0.1</td>
<td>500</td>
<td>61%</td>
<td>304.9</td>
</tr>
<tr>
<td>crop3</td>
<td>1 000</td>
<td>2 000 000</td>
<td>2 000</td>
<td>0.7</td>
<td>1 400</td>
<td>12%</td>
<td>170.7</td>
</tr>
<tr>
<td>crop4</td>
<td>200</td>
<td>200 000</td>
<td>1 000</td>
<td>1</td>
<td>1 000</td>
<td>2%</td>
<td>24.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>8 200</td>
<td>29 200 000</td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td>622.0</td>
</tr>
</tbody>
</table>

The A1 per hectare of AAU in this example is equal to USD 622 /ha. Note that the total AAU is calculated as the sum of the crops from 1 to 4 for which the data for calculating average output per hectare are available. Other crops that exist in the country but for which data on production and prices are not available or are not reliable would be excluded from the calculation of the average output per hectare of AAU. The weighted A1, however, will be applied to the total AAU of each agricultural holding, even if some holdings may have crops other than those used in the calculation.

A2_H: Average output from scattered trees per tree

Scattered trees are usually grown in the yards, at the edges or in the middle of the fields; however, no area is attributed to them. Scattered trees are measured in number of trees.

Countries where the share of production of scattered trees is not significant could decide not to produce statistics on scattered trees. In many countries, however, the production from scattered trees is significant and cannot be excluded from the total production. Furthermore, for some very small agricultural holdings, this may be the only cash crop. In such cases, it is important to include the production from scattered trees in the total agricultural output of the holding.

Countries should compile the list of tree species for which the average output must be calculated. The data necessary at national or regional level for each tree species in the list are:

- Average yield of main product per tree per year;
- Average yield per tree of crop residues if used or sold; and
- Average prices at farm-gate per tree products, including crop residues (for used or sold residues only) per year.

The average annual output for year t per scattered tree of the type Yi can be calculated as follows:

\[
A2_{H}^{t} = Yield_{tree}^{t} \times Farm\_price_{i}^{t}
\]
Similar to average output per hectare of crop \( A_1 \), the \( A_{2yi} \) can be increased by the production from crop residues if their production and utilization are significant in the country or region.

The average output \( A_{2yi} \) is calculated as the average of the annual outputs per tree for three to five consecutive years.

\[
A_{2yi} = \frac{\sum_{t=1}^{T} A_{2yi}}{t}
\]

Where \( t \) is number of consecutive years (three or five)

**EXAMPLE 5.**
The yield from scattered apple trees may differ significantly even in a typical production season because of variety, plant protection methods applied, environmental conditions, etc. An example of calculation of \( A_{1\text{apple tree}} \) for country X is given. Note that when calculating the \( A_1 \) per scattered tree, the technical coefficients for the number of years of cultivation and harvest are not used.

<table>
<thead>
<tr>
<th>Year</th>
<th>Yield</th>
<th>Producer price</th>
<th>( A_1 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>kg/tree</td>
<td>USD/kg</td>
<td>USD/tree</td>
</tr>
<tr>
<td>a</td>
<td>b</td>
<td>c=a*b</td>
<td></td>
</tr>
<tr>
<td>t1</td>
<td>20</td>
<td>0.62</td>
<td>12.4</td>
</tr>
<tr>
<td>t2</td>
<td>85</td>
<td>0.42</td>
<td>35.7</td>
</tr>
<tr>
<td>t3</td>
<td>80</td>
<td>0.48</td>
<td>38.4</td>
</tr>
<tr>
<td>t4</td>
<td>90</td>
<td>0.35</td>
<td>31.5</td>
</tr>
<tr>
<td>t5</td>
<td>89</td>
<td>0.3</td>
<td>26.7</td>
</tr>
<tr>
<td>average ( A_{1\text{apple tree}} ) =</td>
<td></td>
<td></td>
<td>28.9</td>
</tr>
</tbody>
</table>

**Calculation of the total crop output per agricultural holding**

Once the average outputs per hectare of crop \( A_{1 Xi} \) and per scattered tree \( A_{2 Yi} \) are calculated for all crops or majority of crops, the total crop output of each agricultural holding can be calculated using the individual farm data on area of crops and number of scattered trees, applying formula (3).

\[
\text{Crop output} = \sum_{i=1}^{j} (N_{1 Xi} \times A_{1 Xi}) + \sum_{i=1}^{j} (N_{2 Yi} \times A_{2 Yi})
\]

where

- \( N_{1 Xi} \) is the number of ha of crop \( Xi \) cultivated by the agricultural holding
- \( N_{2 Yi} \) is the number of scattered trees of species \( Yi \) cultivated by the agricultural holding
- \( A_{1 Xi} \) is the average annual output from crop \( Xi \) per hectare
- \( A_{2 Yi} \) is the average output from scattered tree of species \( Yi \) per tree
To avoid double counting or underestimation of the total output from crops, it is important to consider how the area of successive and associated crops is recorded. In annual farm surveys, area is usually recorded for each crop production cycle. AGRIS, in its Core Module, Section 3 (Part 3.1 Q6 to 9) also envisage the collection of data on area sown and harvested per crop, up to the fourth harvest. In agricultural censuses, data is often collected on physical area only, such as the area of vegetables, without considering the number of harvests on the same area throughout the reference crop year. In both cases, the calculation of the Crop output is illustrated with an example (see below).

**EXAMPLE 6.**
One agricultural holding has 7.5 ha of AAU, of which 2 ha of maize, 0.5 ha of groundnuts, 3 ha of soybean and 2 ha for mixed beans. The mixed beans are sown on the same area and harvested three times within the crop year. Thus, the sown and harvested area of mixed beans of the holding during the year is 6 ha, while the physical area is 2 ha. The A1 is calculated for all crops, using physical area for maize, soybean and groundnuts and harvested area for mixed beans. The A1s calculated for the purposes of the FT desk study in Zambia are used to demonstrate this example.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Total area sown</th>
<th>Physical area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ha</td>
<td>A1 ZMW/ha</td>
</tr>
<tr>
<td>Maize</td>
<td>2</td>
<td>3 283</td>
</tr>
<tr>
<td>Groundnuts</td>
<td>0.5</td>
<td>2 322</td>
</tr>
<tr>
<td>Soybeans</td>
<td>3</td>
<td>6 704</td>
</tr>
<tr>
<td>Mixed beans</td>
<td>6</td>
<td>914</td>
</tr>
<tr>
<td><strong>Total crop output</strong></td>
<td><strong>33 323</strong></td>
<td></td>
</tr>
</tbody>
</table>

Note that the crop output from mixed beans for the example holding is always 5484 ZMW. In Option 1 the data on area of mixed beans is collected for each sowing and harvesting. There are in total 6 ha sown with mixed beans within the crop year. The A1 corresponds to the average output per hectare per harvest (914 ZMW) and the total output from mixed beans per year is 5484 ZMW (6 ha x 914 ZMW). In Option 2 the data on physical area is available only and the A1 corresponds to the average output per hectare per year (2742 ZMW), which is calculated as the average output per hectare per harvest (914 ZMW) multiplied by the number of harvests per year (3). Again the total output from mixed beans per year of the example holding is 5484 ZMW.
A3 Zi Average output of livestock type or category per head

The average output must be calculated for at least the following five main livestock types, provided that they are important in the country: cattle (including buffaloes), sheep, goats, pigs and poultry. The production from other livestock types such as camels, rabbits, beehives and equines can also be evaluated in countries where it is considered significant. Countries should decide on the livestock types and categories for which the average output will be calculated, according to national conditions and availability of data. However, it is recommended to have data on at least the following categories in each livestock type:

- young animals
- breeding females
- other adult animals

Section 4 of the AGRIS Core Module questionnaire suggests the main categories for cattle, buffaloes, camels, sheep, goats, pigs and poultry for which the number of animals to be collected.

The average output per head of livestock type or category must be calculated for the categories available in the farm surveys. For example, if data on the number of sheep in the agricultural holding of a given farm survey to which the FT will be applied are collected for breeding females and other sheep, the output must be calculated for these two categories. In some countries, only the total number of heads per livestock type (cattle, sheep, etc.) is available at farm level. In such cases, a weighted average output is calculated per head of livestock type, considering the available data on the herd structure at aggregated (regional or national) level. An example of calculation of the weighted average meat output per head of cattle is given further below in this chapter.

Similar to A1Xt and A2Yt, the average output per head of livestock is calculated for a 12-month period. If the production period of an animal is shorter or longer than 12 months, it must be adjusted to reflect 12 months. The A3Zt accounts for (i) meat production expressed in annual growth for each livestock category; (ii) milk production for milking animals such as dairy cows and ewes; (iii) newborn animals for breeding females; and (iv) other products that can be easily allocated to different livestock categories, such as wool and eggs. For the purposes of the determination of the farm size, manure and draught power are not considered as a secondary product from livestock. However, if they are marketed in the country and are considered important, they can be also valued as secondary products from livestock breeding activities.

The average output (A3Zt) from cattle, sheep and goats is the sum of meat, milk and other production (if relevant) per head valued at the farm-gate price. If the livestock is also kept for the production of wool, the output of wool is also valued and added to the A5.
The annual output for year $t$ per head of the livestock category $Z_i$ can be calculated as follows:

$$A^3_{Z_i} = \text{Meat}_{Z_i} + \text{Milk}_{Z_i} + \text{Wool}_{Z_i}$$  \hfill (11)

The annual output for year $t$ from poultry is the sum of meat and eggs production (where relevant) per head valued at the farm-gate price, calculated for each type and category of poultry $Z_i$.

$$A^3_{\text{Poultry}Z_i} = \text{Meat}_{Z_i} + \text{Eggs}_{Z_i}$$  \hfill (12)

The annual output for year $t$ from pigs is the meat production per head valued at the farm-gate price, calculated for each category of pigs $Z_i$.

$$A^3_{\text{Pigs}Z_i} = \text{Meat}_{Z_i}$$  \hfill (13)

The average output $A^3_{Z_i}$ is calculated as the average of the annual outputs per head of livestock category, for three to five consecutive years

$$A^3_{Z_i} = \frac{\sum_{t=1}^{t} A^3_{Z_i}}{t}$$  \hfill (14)

Where $t$ is number of consecutive years (three or five).

**Proposed calculation methods**

Estimations are more precise if the calculations are done at the level of different categories by age and sex for each livestock type. Based on the availability of data, three standards for the estimation of the average output are set.

- **The basic standard** corresponds to estimations based on the total number of livestock by type at regional or national level for the five main livestock types (cattle, sheep, goats, pigs and poultry); estimations may be based only on the total number of livestock by type at regional or national level, if more detailed data at farm level are not available.

- **The silver standard** corresponds to estimations based on the total number of livestock and breeding females at regional or national level, for all livestock types bred in the country.

- **The gold standard** refers to the detailed estimation of the output for each category and type of livestock. This approach is described in the Typology Handbook (European Commission, 2009)\(^4\). It requires detailed data on number of animals present and slaughtered during the reference period of 12 months, prices at the entrance and at the exit of each type and category of livestock, technical information of productivity and mortality of livestock.

The calculation of the elements of animal output – meat, milk and eggs – is presented below, with examples.

Meat output

Two main components of meat output are generated by the livestock systems: (i) live weight growth or gain of the head; (ii) animal output equal to the number of animals disposed (gross offtake) minus the animals purchased or otherwise acquired (intake).

For the purposes of the FT, the annual meat output per livestock category is estimated as the annual growth of the animals in the category. For reproductive female animals, the value of the newborn animal corrected with the productivity coefficient is included.

The following data are required to calculate the meat output per head of livestock category at regional or national level:

- Number of heads per livestock type and category
- Value of the finished animal at farm-gate (or average live weight and average farm-gate price per kg or head)
- Value of the newborn animal (calf, lamb, goat-kid, piglet, etc.)
- Value of the animal at the entry and exit of the categories (calves less than one year of age, dairy and other cows, etc.)
- Technical coefficients: length of the production cycle, productivity rate, mortality rate per category, etc.

\[
Meat_{Zi}^t = \left(Val_{Exit_{Zi}}^t - Val_{Entry_{Zi}}^t\right) \cdot \frac{1}{(Prod\_Cycle_{Zi})}
\]

Where

\(Val_{Exit_{Zi}}\) is Value of the animal at the exit of category \(Zi\) of year \(t\)

\(Val_{Entry_{Zi}}\) is Value of the animal at the entry of category \(Zi\) of year \(t\)

\(Prod\_Cycle_{Zi}\) is Production cycle in years of animals from category \(Zi\)

A similar approach can be used to estimate meat output from animals kept on the holding as capital.

\[
Meat_{Zi}^t = \left(Val_{Fin_{Zi}}^t - Val_{Newborn_{Zi}}^t\right) \cdot \frac{1}{(AGE_{Zi})}
\]

Where

\(Val_{Fin_{Zi}}\) is Value of the finished animal of category \(Zi\) of year \(t\)

\(Val_{Newborn_{Zi}}\) is Value of the newborn animal of year \(t\)

\(AGE_{Zi}\) is Age in years of finished animal from category \(Zi\)

The meat output from reproductive females such as cows, ewes and female goats has to be increased by the value of the newborn calf, lamb or goat-kid, considering the productivity ratio per head.
EXAMPLE 1.
The following information is available for the calculation of meat output per category of cattle (prices and production cycles are indicative):

- Value of the newborn calf = 120 USD
- Value of one-year-old calf = 340 USD
- Value of in-calf heifer = 900 USD
- Value of cull cow = 420 USD
- Value of finished other cattle (cattle more than one year old, other than cow) = 630 USD

Formula (15) is used to calculate the meat output. **Note that the meat output per cow is increased by the number of calves born per cow per year multiplied by the value of the newborn calf.**

\[
\text{Meat}_{\text{cow}} = (420 - 900) \times \frac{1}{7} + 0.8 \times 120 = -69 + 96 = 27 \text { USD/cow}
\]

\[
\text{Meat}_{\text{calf}} = (340 - 120) \times 1 = 240 \text { USD/calf}
\]

\[
\text{Meat}_{\text{other cattle}} = (630 - 340) \times \frac{1}{2} = 145 \text { USD/other cattle}
\]

EXAMPLE 2.
In the Post Harvest Survey of Zambia, the number of cattle is collected per category: cows, bulls, heifers, untrained oxen, trained oxen, tollies or steers and calves. The average farm-gate price for the animals per category can be obtained from the data on the number and value of the sales of live animals during the reference year. As there is no price of newborn calves, the meat output is estimated using the price of a one-year-old calf and recalculating the production cycle accordingly. As an example, the calculation of meat output from trained and untrained oxen in Zambia is given. The following information is available from the survey: average farm-gate price of calves, trained and untrained oxen for four years (2012 to 2015). According to the definition of the category, the calf leaves the category at the age of one year. It is estimated that the oxen are kept until the age of five years. Therefore, it can be calculated that the production cycle of oxen from calf to slaughter is four years (five minus one year). The meat output from untrained oxen for 2012 can be calculated as:

\[
\text{Meat}_{\text{untrained oxen}} = (\text{average price of untrained oxen} - \text{average price of calf}) \times \frac{1}{4} = (2595 - 1572) \times 0.25 = 255.75 \text { ZMW/head}
\]

In the case of oxen, meat is the only product considered for the calculation of output; thus, \(A_3\text{oxen} = \text{Meat}_{\text{oxen}}\). The tables below show the difference in the \(A_3\) coefficients for trained and untrained oxen, because of the higher value of trained oxen.

<table>
<thead>
<tr>
<th>Untrained oxen</th>
<th>Year</th>
<th>Value of oxen when slaughtered (ZMW/head)</th>
<th>Value of calves when sold (ZMW/head)</th>
<th>Production cycle</th>
<th>Average output (ZMW/head)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a</td>
<td>b</td>
<td>c</td>
<td>d = (a-b)/c</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>2 595</td>
<td>1 572</td>
<td>4</td>
<td>256</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>1 800</td>
<td>1 400</td>
<td>4</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>1 800</td>
<td>1 056</td>
<td>4</td>
<td>186</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>2 200</td>
<td>1 200</td>
<td>4</td>
<td>250</td>
<td></td>
</tr>
</tbody>
</table>

---

GUIDELINES FOR DEVELOPMENT OF A CLASSIFICATION SYSTEM RELATED TO FARM TYPOLOGY

For industrial poultry meat production (broilers) and pig fattening, the meat output per year per head can be calculated, considering the length of the production cycle (breeding period + sanitation period), by applying the following formula:

\[
Meat_i^t = \frac{Nb_W}{(Prod\_Cycle\_W_{Zi})} \times (Live\_Weight_{Zi}) \times (Farm\_price^t_{Zi})
\]

Where
\( Nb\_W \) is Number of weeks in one year
\( Prod\_Cycle\_W_{Zi} \) is Production cycle in weeks of animals from category Zi
\( Live\_Weight_{Zi} \) is Live weight of one animal of category Zi
\( Farm\_price^t_{Zi} \) is Farm-gate price for animal of category Zi of year \( t \)

EXAMPLE 3.
In intensive production systems, the production cycle for poultry may vary according to breed, type of production system, geographical location of the production, etc. The following coefficients are given as an example. The production cycle of broilers lasts eight weeks, plus two weeks between the lots. The average live weight of one broiler is 2 kg, the price of live weight is USD 1.40 /kg:

\[
Meat_{poultry} = (52 / 10) \times 2 \times 1.4 = 5.2 \times 2.8 = \text{USD } 14.56 /\text{poultry}
\]

The production cycle of a fattening of a pig is usually 170–180 days. The average live weight of a fattened pig is 100 kg and the price per kg of live weight is USD 1:

\[
Meat_{fattened\ pigs} = (365 / 180) \times 100 \times 1 = 2.03 \times 100 \times 1 = \text{USD } 203 /\text{pig}
\]
Milk output

Milk produced by a cow, sheep or goat is the milk extracted from the animal, regardless of its utilization – for human consumption or for feed and of its disposal, on the farm or for sale, donation, etc. The milk suckled by calves, lambs or goat-kids is excluded.

The following data are necessary to calculate the output from milk production per head of livestock type, at regional or national level:

- number of milking animals per livestock type at the beginning and at the end of the year;
- share of milking animals in the herd (if the number of milking animals is not available)
- total quantity of milk produced by type of milking animal (cow, buffalo, sheep, goat) per year;
- technical coefficients: fertility rate, mortality rate of young animals, quantity of milk per lactation;
- farm-gate price per litre of milk per livestock type.

To estimate milk production per milking female of livestock type Z (Milk\_Z) at national or regional level, two approaches are proposed depending on the available data: (i) using data on total milk production and number of dairy cows, sheep, goats, etc.; and (ii) using technical coefficients for the estimation of average milk production per dairy cows, sheep, goats, etc.

i. Using data on milk production and number of milking animals is the straightforward approach, when such data is available at national or regional level. It is important to compute milk production per milking animal. In some countries, only one or two of the cows that have calved are milked, and the rest are either left with the calves that suckle all the milk or dry up. For the purposes of estimating milk production from cows, for example, it is necessary to have information on dairy cows, that is, cows that have been milked during the reference period. If the exact number of milking females is not known, an estimation of their share in the total number of breeding females in the national or regional herd may be used.

\[ \text{Milk}^Z_i = \left( \frac{\text{Prod\_Milk\_Y}_{iZ}}{\text{Nb\_Milking\_End}_{iZ} + \text{Nb\_Milking\_Init}_{iZ}} \right) \times \text{Farm\_Price\_Milk}^Z_i \]

Where
- \( \text{Prod\_Milk\_Y}_{iZ} \) is Total quantity of milk produced of livestock type \( Z_i \) for the reference year \( t \)
- \( \text{Nb\_Milking\_End}_{iZ} \) is Number of milking females of livestock type \( Z_i \) at the end of the year \( t \)
- \( \text{Nb\_Milking\_Init}_{iZ} \) is Number of milking females of livestock type \( Z_i \) at the beginning of the year \( t \)
- \( \text{Farm\_Price\_Milk}^Z_i \) is Farm-gate price of milk from livestock type \( Z_i \) of year \( t \)

ii. It is necessary to use technical coefficients related to milk production when data on milk production are not available.

\[ \text{Milk}^Z_i = \text{Fert}_{iZ} \times \left( 1 - \text{Mort}_{iZ} \right) \times \text{Prod\_Milk\_Lact}_{iZ} \times \text{Farm\_Price\_Milk}^Z_i \]

Where
- \( \text{Fert}_{iZ} \) is Fertility rate for livestock type \( Z_i \)
- \( \text{Mort}_{iZ} \) is Mortality rate for livestock type \( Z_i \)
- \( \text{Prod\_Milk\_Lact}_{iZ} \) is Total quantity of milk produced per lactation of livestock type \( Z_i \)
- \( \text{Farm\_Price\_Milk}^Z_i \) is Farm-gate price of milk from livestock type \( Z_i \) for year \( t \)
Milk production systems may differ significantly within the country or even within a region. Traditional pastoral systems are much less productive than the intensive and semi-intensive systems. It is therefore advised to calculate the milk output per milking female separately for the different production systems. For this purpose, the variables necessary to calculate the milk output, formulas (18) and (19) must be broken down by production systems.

**EXAMPLE 1.**
Cow milk produced in Bulgaria in 2014 is 1 070 613 tonnes and the number of milk cows was of 307 097 heads in 2013 and 295 374 heads in 2014. Over the same period, the milk produced in one of the regions (North-west region) was equivalent to 144 518 tonnes and the number of milk cows was 38 669 heads in 2013 and 36 108 heads in 2014. The annual price of cow milk is available at national level: USD 0.35 USD/kg. Milk production per milk cow at national level and at regional level for the North-west region of Bulgaria can be calculated using formula (18).

\[
\text{Milk}_{\text{cow}} = \frac{1 \, 070 \, 613 \, 000}{(295 \, 374 + 307 \, 097)/2} \times 0.35 = 3 \, 554 \times 0.35 = \text{USD 1 243.90/cow at national level}
\]

\[
\text{Milk}_{\text{cow}} = \frac{144 \, 518 \, 000}{(36 \, 108 + 38 \, 669)/2} \times 0.35 = 3 \, 865 \times 0.35 = \text{USD 1 352.80/cow at regional level (North-west)}
\]

**EXAMPLE 2.**
In a country X where total milk production data is not available, a survey to collect data in order to obtain milk productivity coefficients can be carried out. The following variables that must be obtained by means of research studies or expert estimates are given as an example:

To calculate the fertility rate: Suppose that the number of cows at the beginning of the year is 1100 heads; the number of cows at end of the year is 1 200 heads; and the number of calves born throughout the year is 800 heads. The fertility rate is equal to: \(800 / [(1 \, 100 + 1 \, 200) / 2] = 0.696\) or 69.6%

To calculate the mortality rate for young calves up to three months of age: the number of calves up to three months of age at the beginning of the year is 100 heads; the number of calves up to three months of age at end of the year is 110 heads; and the number of calves up to three months that died during the year is ten heads. The mortality rate for young calves is equal to: \(10 / (100 + 110) / 2 = 0.095\) or 9.5%

The average quantity of milk per lactation is 2.5 tonnes (2 500 kg). The annual price for the purposes of the example is USD 0.35 /kg.

The milk production per cow can be calculated using formula (19).

\[
\text{Milk}_{\text{cow}} = 0.696 \times (1 – 0.095) \times 2500 \times 0.35 = \text{USD 551.25/cow}
\]

Egg output

Eggs are the principal product of hens. They can be used for consumption or for hatching. The output from eggs produced per hen for a 12-month period (reference year) at national or regional level can be calculated using the following data:

- total number of eggs produced per year;
- number of laying hens at the beginning and at the end of the year, or average number of laying hens;
- total number of eggs produced over the lifetime of the hen;
- technical coefficients: production cycles of hens, number of clutches per hen, number of eggs per clutch, clutch management (share of eggs removed for consumption and share of eggs kept for reproduction); and
- farm-gate price per egg.
Three formulas are proposed for application depending on the intensity of the production system and the availability of data in different countries.

\[
Egg^*_Z_i = \left( \frac{Prod\_Eggs^*_Z_i \cdot Nb\_Hens\_End^*_Z_i}{2 \cdot Nb\_Hens\_Init^*_Z_i} \right) \cdot Farm\_Price\_Egg^*_Z_i
\]

Where

- \( Prod\_Eggs^*_Z_i \) is Total number of eggs produced of poultry type \( Zi \) in year \( t \)
- \( Nb\_Hens\_End^*_Z_i \) is Number of laying hens/other laying poultry at the end of the year \( t \)
- \( Nb\_Hens\_Init^*_Z_i \) is Number of laying hens/other laying poultry at the beginning of the year \( t \)
- \( Farm\_Price\_Egg^*_Z_i \) is Farm-gate price of one egg of poultry type \( Zi \) in year \( t \)

or

\[
Egg^*_Z_i = Egg\_Live\_Hen^*_Z_i \cdot \frac{Nb\_W}{Prod\_Cycle\_Hen\_W^*_Z_i} \cdot Farm\_Price\_Egg^*_Z_i
\]

Where

- \( Nb\_W \) is Number of weeks in one year
- \( Prod\_Cycle\_Hen\_W^*_Z_i \) is Production cycle of hens/other laying poultry in weeks
- \( Egg\_Live\_Hen^*_Z_i \) is Total number of eggs produced over the lifetime of a hen/other laying poultry
- \( Farm\_Price\_Egg^*_Z_i \) is Farm-gate price of one egg of poultry type \( Zi \) in year \( t \)

In intensive production systems where the egg production is well separated from other activities, the differentiation of laying hens and breeders (hens laying eggs for the production of laying hens and broilers) must be further subdivided. The eggs of laying hens are all used for final consumption and are usually sold, while the fertile eggs of breeders are used on the farm or away to produce chicken and to grow pullets for laying hens or broilers.

In extensive production systems, meat and eggs productions are not clearly separated. A part of the produced eggs is consumed by the household of the agricultural holding or sold and another part is used to produce chicken and to grow pullets for laying hens or broilers on the farm. In such a system, information on clutch management (reproduction or removal of eggs) is necessary to estimate the share of eggs that are removed for self-consumption or for sale, gift or other disposals as eggs.

\[
Egg^*_Z_i = Clutch\_Hen\_Y^*_Z_i \cdot Egg\_Clutch^*_Z_i \cdot Egg\_Remove^*_Z_i \cdot Farm\_Price\_Egg^*_Z_i
\]

Where

- \( Clutch\_Hen\_Y^*_Z_i \) is Average number of clutches per hen/other laying poultry per year
- \( Egg\_Clutch^*_Z_i \) is Average number of eggs of poultry type \( Zi \) per clutch
- \( Egg\_Remove^*_Z_i \) is Share of removed eggs of poultry type \( Zi \)
- \( Farm\_Price\_Egg^*_Z_i \) is Farm-gate price of eggs of poultry type \( Zi \) for year \( t \)

The eggs used to produce laying hens or chicken for meat would be valued as meat output.
GUIDELINES FOR DEVELOPMENT OF A CLASSIFICATION SYSTEM RELATED TO FARM TYPOLOGY

Calculation of weighted average of meat output per head of livestock type

If data on livestock are available only by livestock type (cattle, sheep, poultry, etc.) and not by detailed category in each type (young cattle, breeding female, etc), the meat output per head of livestock type such as cattle, sheep and poultry can also be estimated by calculating the annual net offtake ratio per head, valued by the relevant average farm-gate price per head.

The net offtake considers the number of animals that annually exit the herd by ways different from death and the number of animals that annually enter the herd by ways different from birth. The data required to calculate meat output per head of livestock type using the net offtake rate at regional or national level are:

- number of heads per livestock type at the beginning and at the end of the 12-month reference period, or average number of animals per year;
- number of slaughtered animals on the farm per livestock type per 12-month reference period;
- number of animals sold for cash by the farms per livestock type per 12-month reference period;
- number of animals disposed of otherwise (donations, exchange, gifts, etc.) by farms per livestock type per 12-month reference period;
- number of animals purchased or otherwise acquired per 12-month reference period; and
- annual average farm-gate price per head (live weight) of livestock type or per kg per 12-month reference period.

EXAMPLE 1.
The production cycle of laying hens in Great Britain is estimated as being 58.33 weeks long and the number of eggs produced over a lifetime of a bird is 308; the price of one egg is USD 0.044. The average output from egg production in one year (12 months) can be calculated applying formula (21):

\[ \text{Egg}_{\text{hen}} = 308 \times \left( \frac{52}{58.33} \right) \times 0.044 = 275 \text{ eggs/hen/year} \times \text{USD 0.044/egg} = \text{USD 12.1/hen} \]

EXAMPLE 2.
A study in the United Republic of Tanzania showed that on average there are 3.04 clutches per hen per year and the average number of eggs per clutch was estimated at 10.3. There is no information on clutch management; however, assume that 10 percent of the eggs are removed for consumption or sale as eggs, while 90 percent are left for hatching. The average output from egg production for consumption or sale as eggs in one year (12 months) can be calculated applying formula (22):

\[ \text{Egg}_{\text{hen}} = 3.04 \times 10.3 \times 0.1 \times 0.044 = 3.13 \times 0.044 = 0.14 \text{ USD/hen} \]

In this case, the 90 percent of eggs left for hatching and breeding on the farms as chicken must be evaluated as meat production.

6 Typology Handbook, RI/CC 1500.
Usually, these data are collected from a smaller sample of farms and aim to update different technical coefficients per livestock type, including the offtake ratios. Different production systems, such as pastoral, nomadic or sedentary livestock breeding, and intensive or extensive practices, lead to large differenced in the offtake and intake ratios of the relevant herds. It is therefore necessary to calculate the net offtake ratio per production system. In addition, these ratios must be regularly updated (at least every five years).

The meat output per head of livestock type is computed using the following formula, where Zi is the livestock type:

\[
Meat^Z_i = \left( Offtake_{Z_i} \right) \times \left( Farm\_price^Z_i \right)
\]

Where

- \( Offtake_{Zi} \) is Net offtake rate of animals from type Zi for a reference year
- \( Farm\_price^Z_i \) is Farm-gate price of animals from type Zi for year \( t \)

The annual net offtake accounts for the disposals and acquisitions of animals during the 12-month reference period.

The disposed animals, also known as gross offtake, comprise: (i) the animals slaughtered for home consumption; (ii) sold for cash; and (iii) other disposals such as donations, exchanges, gifts, etc. per year. Dead or stray animals are excluded.

The acquired animals, also known as intake, include: (i) purchased animals; and (ii) animals otherwise acquired, such as received as donations, exchanges or gifts, per year. Born animals are excluded.

The net offtake ratio is calculated as follows:

\[
Offtake^Z_i = \frac{Nb\_Disp_{Zi} - Nb\_Acq_{Zi}}{\left( Nb\_Live\_End_{Zi} + Nb\_Live\_Init_{Zi} \right)}
\]

Where

- \( Nb\_Disp_{Zi} \) is Number of disposed animals of type Zi for a reference year
- \( Nb\_Acq_{Zi} \) is Number of acquired animals of type Zi for a reference year
- \( Nb\_Live\_End_{Zi} \) is Number of animals from type Zi at the end of the reference year
- \( Nb\_Live\_Init_{Zi} \) is Number of animals from type Zi at the beginning of the reference year

**EXAMPLE 1.**

The number of cattle from the livestock survey conducted in country X was 5 700 heads in 2016 and 5 600 heads in 2017. In 2017, the total number of disposed cattle is 1 300, while the purchased animals were about 500. The net offtake rate of the cattle herd for country X for year 2017 is estimated as:

\[
\text{Net offtake rate}_{\text{cattle}} = \frac{(1,300 - 500)}{[(5,600 + 5,700)/2]} = 800 / 5,650 = 0.142
\]

The average price per head of cattle for the purposes of this example is USD 500 /head. The meat output per head of cattle in country X for year 2017 can be calculated using formula (23).

\[
\text{Meat}_{\text{cattle}} = 0.142 \times 500 = \text{USD 71 /head}
\]
Calculation of total livestock output per agricultural holding

Once the average outputs of main animal products per head are calculated per livestock type and category, the total livestock output of an agricultural holding can be calculated using the individual farm data on the number of animals as presented in formula (4).

\[
\text{Livestock output} = \sum_{i=1}^{l} (N3_{zi} \times A3_{zi})
\]

where

\(N3_{zi}\) is the number of heads of livestock category \(Zi\) raised by the agricultural holding

\(A3_{zi}\) is the average output from livestock type or category \(Zi\) per head

Each livestock category may have one or more products included in the calculation of \(A3\). For example, dairy cows have meat and milk output, while other cows (that are not milked) have only meat output; laying hens have meat and eggs output, while chicken have only meat output. The number of animals per category is multiplied by the relevant \(A3\) to obtain the total livestock output of each agricultural holding. The calculation of the livestock output is illustrated below with an example.

**EXAMPLE 1.**

One agricultural holding has cattle and pigs. The data is collected per livestock category. The average output per head is calculated as the sum of the output per head for all relevant products. The \(A3\) calculated for the purposes of the FT desk study in Zambia are used to demonstrate this example.

<table>
<thead>
<tr>
<th>Livestock categories</th>
<th>heads</th>
<th>A3 of which output per animal product</th>
<th>Livestock output</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>number a b = (c+d+e)</td>
<td>ZMW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ZMW/head c d e f = (a*b)</td>
<td>ZMW</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ZMW/animal</td>
</tr>
<tr>
<td>Cows</td>
<td>10</td>
<td>557.00 327.00 230.00</td>
<td>5,570</td>
</tr>
<tr>
<td>Bulls</td>
<td>30</td>
<td>306.00 306.00 0</td>
<td>0</td>
</tr>
<tr>
<td>Heifers</td>
<td>2</td>
<td>428.00 428.00 0</td>
<td>856</td>
</tr>
<tr>
<td>Untrained oxen</td>
<td>2</td>
<td>198.00 198.00 0</td>
<td>0</td>
</tr>
<tr>
<td>trained oxen</td>
<td>2</td>
<td>416.00 416.00 0</td>
<td>832</td>
</tr>
<tr>
<td>tollies/steers</td>
<td>8</td>
<td>881.00 881.00 0</td>
<td>0</td>
</tr>
<tr>
<td>Calves</td>
<td>4</td>
<td>980.00 980.00 0</td>
<td>7,840</td>
</tr>
<tr>
<td>Pigs</td>
<td>4</td>
<td>624.00 624.00 0</td>
<td>2,496</td>
</tr>
<tr>
<td>Total livestock output</td>
<td></td>
<td></td>
<td>17,594</td>
</tr>
</tbody>
</table>

**Note that for cows only, there is also output from milk to be considered.**

Also, the \(A3\) for all categories of cattle defined by the Post-harvest survey of Zambia were calculated. However, in the example holding, not all livestock categories are bred on the farm.
Calculation of the economic size of the holding

The average output calculated at aggregated level (national or regional) applied to the relevant crop and livestock data of each individual holding results in the calculation of the total agricultural output, that is, the economic size of the holding. Formula (2) is recalled here below:

\[
\text{Economic size of the holding (ES)} = \text{Total Agricultural Output} \\
= \sum_{i=1}^{t} (N1_{xi} \times A1_{xi}) + \sum_{i=1}^{t} (N2_{yi} \times A2_{yi}) + \sum_{i=1}^{t} (N3_{zi} \times A3_{zi})
\]

where

- \(N1_{xi}\) is the number of hectares of crop \(Xi\) cultivated by the agricultural holding
- \(N2_{yi}\) is the number of scattered trees of species \(Yi\) cultivated by the agricultural holding
- \(N3_{zi}\) is the number of heads of livestock category \( Zi \) raised by the agricultural holding
- \(A1_{xi}\) is the average output from crop \(Xi\) per hectare
- \(A2_{yi}\) is the average output from scattered tree of species \(Yi\) per tree
- \(A3_{zi}\) is the average output from livestock type or category \(Zi\) per head

Depending on the level at which the average annual outputs are calculated, holdings in the same country or region that have the same structure will have the same economic size.

EXAMPLE 1.

The table below shows an example of calculation of the economic size of the agricultural holding. The average output per crop (A1), average output per scattered tree (A2) and average output per head of livestock category (A3) are multiplied by the number of hectares, trees and heads of livestock for each commodity of the holding. The total of the values is the economic size of the holding. In this example, the holding size is PPP $4 090 and size class 3 (for size classes, see table 5 above).

<table>
<thead>
<tr>
<th>Production structure of the holding</th>
<th>A1/ A2/ A3 (PPP $)</th>
<th>Total output per item (PPP $)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item</strong></td>
<td><strong>Unit</strong></td>
<td><strong>Size</strong></td>
</tr>
<tr>
<td>wheat</td>
<td>ha</td>
<td>2</td>
</tr>
<tr>
<td>maize</td>
<td>ha</td>
<td>1</td>
</tr>
<tr>
<td>scattered apple trees</td>
<td>number</td>
<td>3</td>
</tr>
<tr>
<td>cattle</td>
<td>number</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total =</strong></td>
<td></td>
<td><strong>Economic size of the holding (PPP $):</strong></td>
</tr>
</tbody>
</table>
Main data sources for classification variables related to farm size

The main data sources for classification of farms according to their farm size are farm-level surveys (an exhaustive agricultural census or a sample survey such as AGRIS). The AGRIS modules can provide the structural data (area of crops and number of livestock) and an estimation of the economic data necessary for the calculation of the economic size of each farm from the sample.

Similar to the farm profile classification, if the annual survey represents the population of agricultural holdings only partially (for example, only the household sector), the other subpopulations must be classified by farm size using other existing sources. These sources (other agricultural surveys, household surveys, administrative registers, etc.) should also contain structural characteristics of the individual agricultural holdings.

Different production surveys are usually the source to calculate average output per hectare of crop and per head of livestock category. They can be completed with administrative data, expert estimates and technical coefficients.

The main variables to compute average output per hectare or head and the main data sources are listed in table 8 below. If more than one source is available for the same variable, the quality of the data from each source must be evaluated in terms of coherence of the definition, availability and accessibility of the data, sustainability of the source, etc.

<table>
<thead>
<tr>
<th>Code</th>
<th>Data item</th>
<th>Level</th>
<th>Reference period</th>
<th>Main data sources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Agricultural census</td>
</tr>
<tr>
<td>1</td>
<td>Area of crops per crop type</td>
<td>Farm</td>
<td>Crop year</td>
<td>[☑️](full scope or sample)</td>
</tr>
<tr>
<td>2</td>
<td>Number of heads per livestock type and category (at least the number of</td>
<td>Farm</td>
<td>Given reference</td>
<td>[☑️](full scope or sample)</td>
</tr>
<tr>
<td></td>
<td>breeding females must be collected separately)</td>
<td></td>
<td>day</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cultivated area per crop type</td>
<td>Regional</td>
<td>Crop year</td>
<td>☑️</td>
</tr>
<tr>
<td>4</td>
<td>Number of animals per livestock category in the beginning and at the</td>
<td>Regional</td>
<td>12 months</td>
<td>☑️</td>
</tr>
<tr>
<td></td>
<td>end of the 12-month period</td>
<td>National</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Number of animals disposed of and acquired during the reference period</td>
<td>Regional</td>
<td>12 months</td>
<td>☑️</td>
</tr>
<tr>
<td>6</td>
<td>Physical quantities produced of vegetal and animal production</td>
<td>Regional</td>
<td>Crop year</td>
<td>☑️</td>
</tr>
<tr>
<td>7</td>
<td>Average yields per hectare or head</td>
<td>Regional</td>
<td>12 months</td>
<td>☑️</td>
</tr>
<tr>
<td>8</td>
<td>Farm-gate prices per crop product, head of livestock and animal product</td>
<td>Regional</td>
<td>Crop/calendar year</td>
<td>☑️</td>
</tr>
<tr>
<td>9</td>
<td>Market price per crop product, head of livestock and animal product</td>
<td>Regional</td>
<td>Crop/calendar year</td>
<td>☑️</td>
</tr>
<tr>
<td>10</td>
<td>Technical coefficients for fertility, mortality, productivity and length</td>
<td>Regional</td>
<td>Crop/calendar</td>
<td>☑️</td>
</tr>
<tr>
<td></td>
<td>of production cycle</td>
<td>National</td>
<td>year/12 months</td>
<td></td>
</tr>
</tbody>
</table>
3.3. COMMODITY SPECIALIZATION

Among the dimensions to consider for the FT, “specialization” is one of those recommended by development experts. Specialization is related to the type of the main agricultural production activity in which the holding is involved. In fact, in the practice of agricultural activities, three main categories must be distinguished:
- crop production;
- livestock production; or
- a combination of both

Authors or practitioners often inquire upon the need to integrate specialization into the definition of a typology. Because the typology has the purpose of addressing constraints in the agricultural sector through policy intervention and appropriate decision-making, the distinction based on specialization is important. Indeed, even the evaluation of the sustainability and the profitability of any production activity is done through performance indicators. Depending on whether the holding is involved in one activity or another, the calculation of a performance indicator is based on different variables. Thus, it is advisable to clearly distinguish between these activities even if they may be conducted in a combined manner, in some cases. A few examples of different measurement needs relating to farm specialization are given in annex I to these guidelines.

Specialization is usually defined on the basis of the main agricultural production activity of the farm. Using “main agricultural production activity” as a classification variable may be criticized for failing to adequately represent the target population for policy purposes. In countries where the majority of the farms are mixed (have both crop and livestock production activities), often, more than 50 percent of the livestock or area of crops may be found in mixed farms. In fact, specialization allows for more targeted analyses and also supports measures in this situation, comparing the productivity of specialized and mixed farms, identifying specific shocks and stresses to which they are exposed, analysing the resilience of different farm specializations to market and climate changes, etc.

For the purposes of the FT, commodity specialization is the agricultural production activity of the agricultural holding that makes the greater contribution to the total agricultural activity of the holding. Agricultural activity, and therefore production specialization, can be measured in different ways.

Often, specialization is defined by the share of:
- the output of the specific production activity in the total agricultural output of the holding;
- the sales of specific products in the total sales of agricultural products; and
- the labour input used for specific production activity in the total agricultural labour input of the holding.8

Considering the importance of production used for own consumption in agricultural holdings in developing countries, these Guidelines propose using agricultural output to define the main agricultural activity of the holdings for FT purposes.

---

8 As labour input per specific production activity is very difficult to collect on a regular basis, this approach to determining commodity specialization is not considered in these Guidelines.
Classification variables: definition and calculation

V5. Main agricultural activity of the holding

- In classification, it is possible to use the AGRIS Core Module (Section 1, Part 1.3, Q 26, 27 and 28) and the WCA 2020 essential and frame item 0110 – Main agricultural activity of the holding.
- Average output per hectare and head calculated to estimate the farm economic size, described in section 3.2 Guidelines, can be used to calculate the share of the output from each production activity in the total agricultural output of the holding.
- Where ES is the total economic size of the holding expressed in monetary units (total agricultural output of the holding),

\[
(25) \text{ If } \text{Crop output} \geq \frac{2}{3} * ES, \text{ then the agricultural holding is specialized in crop production}
\]

\[
(26) \text{ If } \text{Livestock output} \geq \frac{2}{3} * ES, \text{ then the agricultural holding is specialised in livestock production}
\]

\[
(27) \text{ If } \text{Crop output} < \frac{2}{3} * ES \text{ and } \text{Livestock output} < \frac{2}{3} * ES, \text{ then the agricultural holding is mixed}
\]

For the purposes of these Guidelines, three main classes are proposed. However, the gold standard (see below) implies a more detailed classification that considers specific commodities or combination thereof, different production systems, etc. For national and regional purposes, the level of specialization may distinguish between different groups of perennial and non-perennial crops in class 1, and types of livestock, types of production systems, etc. in class 2. Furthermore, mixed farms (class 3) should be broken down considering product combinations commonly practiced in the country or in the region, such as cereals and livestock, permanent crops and livestock, etc. The detailed classes should be defined in such a way that they can be aggregated to the three main classes.

| TABLE 9. CLASSIFICATION OF HOLDINGS BY COMMODITY SPECIALIZATION |
|---|---|---|
| Class | Holdings producing: | Of which: |
| 1 | Mainly crop production | The crop output is equal or higher than two-thirds of the total agricultural output of the holding |
| 2 | Mainly livestock production | The livestock output is equal or higher than two-thirds of the total agricultural output of the holding |
| 3 | Mixed (crop and livestock) | Neither of them is equal or higher than two-thirds of the total agricultural output of the holding |
In many countries, the detailed information necessary to value the total production and the share of each specific production activity is not available. Therefore, three standards of classification per commodity specialization are proposed, depending on the approach used to define the specialization:

- **The basic standard**: holdings are classified into three groups: (i) mainly crop production; (ii) mainly livestock production; and (iii) mixed (crop and livestock) based on the farmer’s opinion.

- **The silver standard**: holdings are classified into three groups: (i) mainly crop production; (ii) mainly livestock production; and (iii) mixed (crop and livestock) based on the estimation of total agricultural output and crop and livestock output per agricultural holding.

- **The gold standard**: holdings are classified into more detailed groups that are obtained by disaggregating the three basic ones: (i) mainly crop production; (ii) mainly livestock production; and (iii) mixed (crop and livestock) based on the estimation of the output from different agricultural production activities per agricultural holding.

Countries that already have a system to define production specialization that is in line with the proposed approach can use their own classifications.

---

**EXAMPLE 1.**

In the EU, product specialisation is called type of farming and is defined using the standard output of the farm. The production system is characterised by the relative contribution of different enterprises to the holding’s total standard output (SO).

Agricultural holdings are classified into nine general types, the first five being specialized (that is, the production type represents two-thirds or more of the total SO of the holding):

**Specialists:**

1. field crops (general cropping)
2. horticulture (vegetables and flowers)
3. permanent crops (vines and fruit trees)
4. grazing livestock (bovine animals for milk and meat, sheep, goats)
5. granivores (pigs, poultry and rabbits)

**Mixed:**

6. combination of crop products
7. combination of livestock products
8. combination of crop and livestock products
9. not specified

The nine general types can be broken down into 21 principal and 62 particular farm types to best reflect the diversity of agricultural holdings in the EU.

---

Determination of commodity specialization of agricultural holding using economic size calculations
The principles governing the classification of holdings by main agricultural production activity, defined above, are illustrated here.

The value of the holding’s production or the total agricultural output of the holding is the total potential value of the available production in the reference year that will be either sold, used as a means of production, processed by the household, consumed in the household, put into storage or used as own-account produced fixed capital goods. The methods and formulae to calculate total agricultural output and its elements, crop and livestock output, are given in section 3.2 of these Guidelines (see V4 – Economic size of the holding).

**EXAMPLE 2.**
A holding with an economic size of PPP $ 4 090 has an output from crops of PPP $ 2 790, which represents 68 percent of the total or just over the two-thirds limit. This holding is therefore specialized in crop production.

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Size</th>
<th>A1/A2/A3 (PPP $)</th>
<th>Total output per item (PPP $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>wheat</td>
<td>ha</td>
<td>2</td>
<td>950</td>
<td>1 900</td>
</tr>
<tr>
<td>maize</td>
<td>ha</td>
<td>1</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>scattered apple trees</td>
<td>number</td>
<td>3</td>
<td>30</td>
<td>90</td>
</tr>
<tr>
<td>cattle</td>
<td>number</td>
<td>2</td>
<td>650</td>
<td>1 300</td>
</tr>
<tr>
<td><strong>Total =</strong></td>
<td></td>
<td></td>
<td></td>
<td>Economic size of the holding (PPP $): 4090</td>
</tr>
</tbody>
</table>

**EXAMPLE 3.**
Example 3. When neither crop nor livestock output is equal to or greater than two-thirds of the total agricultural output, the farm is classified as mixed.

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Size</th>
<th>A1/A2/A3 (PPP $)</th>
<th>Total output per item (PPP $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>wheat</td>
<td>ha</td>
<td>2</td>
<td>950</td>
<td>1 900</td>
</tr>
<tr>
<td>maize</td>
<td>ha</td>
<td>1</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>scattered apple trees</td>
<td>number</td>
<td>3</td>
<td>30</td>
<td>90</td>
</tr>
<tr>
<td>cows</td>
<td>number</td>
<td>3</td>
<td>650</td>
<td>1 950</td>
</tr>
<tr>
<td>calves</td>
<td>number</td>
<td>2</td>
<td>400</td>
<td>800</td>
</tr>
<tr>
<td>other cattle</td>
<td>number</td>
<td>1</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td><strong>Total =</strong></td>
<td></td>
<td></td>
<td></td>
<td>Economic size of the holding (PPP $): 5 840</td>
</tr>
</tbody>
</table>
Main data sources for classification variables related to commodity specialization

The main data source for classifying farms according to their commodity specialization is a farm-level survey (either an exhaustive agricultural census or a sample survey, such as AGRIS). The calculation of the farm’s economic size presented in section 3.2 (See V4) envisages a detailed calculation of the output from crops and livestock, which would allow for immediate and detailed classification per commodity specialization. If the farm’s economic size cannot be calculated, a direct question to the farmer on the main agricultural production activity can be used. Such a question is usually included in the agricultural census questionnaires and is also part of the AGRIS Core Module questionnaire.

Similar to previous dimensions, classification per commodity specialization must be applied to the entire population of agricultural holdings. Therefore, additional sources should be identified if the agricultural surveys cover the population of agricultural holdings only partially.

3.4. DIVERSIFICATION

Farm diversification refers to the importance of other economic activities carried out on the farm. Often, agricultural holdings are engaged in economic activities other than agricultural production although still using the resources of the farm, such as buildings, equipment, labour, etc. For example, in addition to producing crops or breeding livestock, an agricultural holding may have forestry activities; households operating agricultural holdings may also operate a shop or restaurant using the food produced on the farm, the same labour force, etc. AGRIS modules require collection of data on different aspects of the other economic activities: presence, labour, income, etc. The AGRIS Handbook, Annex 1-1b provides the list of other economic activities that may be related to agricultural holdings.

Attention!

For the household sector, when the agricultural holding is associated with an agricultural household, a distinction has to be made between the income of the agricultural holding (that includes agricultural activities and other economic activities of the agricultural holding) and the income of the household (that includes income from the agricultural holding and the off-farm income of the households such as salaries, transfers, rents, etc.). Only other economic activities of the agricultural holding (farm) are considered when defining farm diversification. The off-farm income of the household is not considered here. It can be used to define specific farm profiles at national level, in particular to identify households that depend largely on their agricultural holdings (subsistence farming) and those that have more significant off-farm income (hobby/leisure farms). For further details of these specific farm profiles, see chapter 4.3 of these Guidelines.

All agricultural holdings, including those in the household sector and agricultural enterprises (commercial farms) may have other significant economic activities, such as agricultural services, processing of agricultural products, etc., which need to be considered.

Therefore, for the purposes of the FT, the level of diversification is defined for all agricultural holdings regardless of their legal status.
Two approaches can be used for this dimension:

i. The first, immediate approach towards classifying farms according to their diversification is to account for the presence (or absence) of other economic activities. The following two classes may be defined:
   - Holdings with other economic activity (diversified holdings)
   - Holdings without other economic activity (non-diversified holdings)

ii. Farm diversification can also be defined in a quantitative way using the information on the share of other economic activities in the total farm income or output. These Guidelines recommend the use of output, as it is relatively simpler to compute at farm level. Computation of total farm income per farm would also require an estimation of the inputs. More detailed classes can be defined according to the different shares of non-agricultural farm activities in the total income of the agricultural holding.

Some of the main terms that will be used to define farm diversification are defined here for the purposes of these Guidelines.

*Total farm income* of the agricultural holding covers income from agricultural (crop and livestock breeding) and non-agricultural activities of the farm (forestry, fishery, etc.). Income from off-farm activities (salaries, transfers, etc.) is excluded.

*Total agricultural income* of the agricultural holding is the income from all agricultural production of the holding. The total agricultural income covers all income from crop and livestock activities, including main crop products, crop residues, livestock and animal products. Income from processing agricultural products on the farm (cheese, olive oil, jam, etc.) is excluded.

*Income from other economic activities* on the agricultural holding is the income from non-agricultural activities on the farm, such as forestry, fishery, aquaculture, processing of agricultural products, crafts and agro-tourism, for which the farm assets and labour are used. Income from processing agricultural products on the farm (cheese, olive oil, jam, etc.) is included here. Income from off-farm activities (salaries, transfers, etc.) is excluded.

For the purposes of these Guidelines, Output and Income are considered proxies (no cost data are used to compute the income variable) or it can be easily replaced by Standard Output when data for three consecutive years are available.

For the purposes of the FT, countries have to specifically distinguish and list other economic activities and off-farm activities. The list from the AGRIS Core module (Section 5, Q01 – Other economic activities of the holding) can be used as the basis.
Classification variables: definition and calculation

V6 Presence of other economic activities on the farm

- AGRIS Core Module, Section 5, Q01
- The answers regarding the presence of other economic activities on the holdings can be used to calculate the variable. More detailed classes for holdings with other economic activities could also be developed by countries, if needed, for example:

  (28) If the answer for Presence of “Forestry and logging activity” is YES, then the agricultural holding is diversified with forestry activities.

  (29) If the answer for Presence of “Forestry and logging activity” is NO but for Presence of “Fishing and aquaculture” is YES, then the agricultural holding is diversified with fishing activities.

  (30) If the answer NO is given for Presence of “Forestry and Fishing activities” but the answer is YES for: Presence of “Support activities to agriculture and post-harvest crop activities” OR “Hunting, trapping, and related service activities” OR “Manufacturing” OR “Wholesale and retail trade, repair of motor vehicles and motorcycles” OR “Hotels and restaurants (excluding agrotourism)” OR “Agrotourism” OR “Other”, then the agricultural holding is diversified with other activities.

  (31) If answer NO is given for all types of other economic activity, then the agricultural holding is not diversified.

Classes should respect the exclusivity criteria and farms should be classified into only one class even if they have more than one “other economic activity”. The classification should prioritize the most important or most practiced “other economic activity”, as a starting point.
V7 Share of holding’s agricultural production in total farm income

- Section 5, Part 5.1 of the AGRIS Core module includes a detailed question regarding the presence of other economic activities of the holding, while the AGRIS Economy module, part 2 foresees the collection of detailed information on the income from agricultural and other activities on the farm.
- The answers on the income from a holding’s agricultural production and other economic activities can be used to calculate the variable.
- For the purposes of the FT, total agricultural output, output from other economic activities and total farm output are considered proxies of the relevant income indicators.

(32) If “100 percent of the total farm income comes from agricultural activities”, then the agricultural holding is **not diversified**

(33) If “75 percent to less than 100 percent of the total farm income comes from agricultural activities”, then the agricultural holding is **less diversified**

(34) If “25 percent to less than 75 percent of the total farm income comes from agricultural activities”, then the agricultural holding is **moderately diversified**

(35) If “less than 25 percent of the total farm income comes from agricultural activities”, then the agricultural holding is **very diversified**

The four proposed classes can be aggregated to two. Table 10 below compares the two classification variables that are proposed for the diversification dimension.

**TABLE 10. CLASSIFICATION OF HOLDINGS BY LEVEL OF DIVERSIFICATION.**

<table>
<thead>
<tr>
<th>Class</th>
<th>Classification based on presence of other economic activities</th>
<th>Disaggregated classes</th>
<th>Holdings is:</th>
<th>Classification based on the share of agriculture in total on-farm income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not diversified (no other on-farm economic activities)</td>
<td>1</td>
<td>Not diversified</td>
<td>All income comes from agriculture</td>
</tr>
<tr>
<td>2</td>
<td>Diversified (at least one other on-farm economic activity)</td>
<td>2</td>
<td>Less diversified</td>
<td>75 percent to less than 100 percent of income comes from agriculture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>Moderately diversified</td>
<td>25 percent to less than 75 percent of the income comes from agriculture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>Very diversified</td>
<td>Less than 25 percent of the income comes from agriculture</td>
</tr>
</tbody>
</table>
Main data sources for classification variables related to diversification

The main data sources for classification of farms according to the level of their income diversification are farm-level surveys (an exhaustive agricultural census or a sample survey such as AGRIS). The AGRIS Core Module provides annual data on the presence of other economic activities of the farm and their importance for each agricultural holding from the sample. The AGRIS Eco Module envisages the collection of necessary variables to estimate both the output and the income from agriculture and other on-farm economic activities.

If the annual survey represents the population of agricultural holdings only partially, the other subpopulations can be identified through additional sources. These sources (other agricultural surveys, household surveys, administrative registers, etc.) should also contain information on income or output from other economic activities of the agricultural holdings.
Building Farm typology for Policy Use

The FT is an important element of an integrated agricultural statistical system and contributes to the improvement of statistical data quality. Therefore, the concepts and definitions used are harmonized with the FAO WCA 2020 and the GSARS AGRIS methodology.

In the previous chapters, the scope and the coverage of the farm typology, the definition of dimensions and the calculation of the classification variables were discussed. In this chapter, the establishment and the use of farm typology is presented.

To ensure coherence between different national and regional farm classifications, when designing national FTs, countries should align their own definitions to the international context as much as possible, as presented in the previous chapters.
4.1. COMBINATION OF THE DIMENSIONS

The four dimensions presented in chapter 3 can be considered as building blocks of the farm typology, each crossing of dimensions creating a unique combination called farm type. Considering the exclusivity and exhaustivity criteria of the UNSD definition of statistical classification:

• each farm has to be classified in one farm type only

AND

• all farms have to be classified in a farm type.

In chapter 3, for each dimension, a certain number of classes were defined at the basic level:

1. Farm profile – 3 classes
   • Civil person or group of civil persons producing mainly for own consumption
   • Civil person or group of civil persons producing mainly for sale
   • Juridical persons producing mainly for sale

2. Economic farm size – 12 classes
   • ≥ 0 PPP $ to ≤ 1 000 PPP $
   • > 1 000 PPP $ to ≤ 2 000 PPP $
   • > 2 000 PPP $ to ≤ 5 000 PPP $
   • > 5 000 PPP $ to ≤ 10 000 PPP $
   • > 10 000 PPP $ to ≤ 20 000 PPP $
   • > 20 000 PPP $ to ≤ 50 000 PPP $
   • > 50 000 PPP $ to ≤ 100 000 PPP $
   • > 100 000 PPP $ to ≤ 250 000 PPP $
   • > 250 000 PPP $ to ≤ 500 000 PPP $
   • > 500 000 PPP $ to ≤ 750 000 PPP $
   • > 750 000 PPP $ to ≤ 1 000 000 PPP $
   • > 1 000 000 PPP $

3. Commodity specialization – three classes
   • Mainly crop production
   • Mainly livestock production
   • Mixed (crop and livestock) production

4. Diversification – two classes
   • Not diversified agricultural holdings
   • Diversified agricultural holdings

Additionally, countries will further detail the classification of each dimension according to their specific contexts and needs.
If a simple crossing of all dimensions and classes is done, 216 possible combinations would result, forming 216 farm types (3 x 12 x 3 x 2). Many of these farm types would actually not be statistically significant. Some classes would be affected by confidentiality issues, and would not be of particular interest for policy-makers and other data users. Furthermore, considering the fact that the main sources of data would often be sample surveys, the estimates with such a level of detail would have a large sampling error and would not be reliable. Instead, a grouping of classes should be applied by the countries or some dimensions may be omitted, wholly or partially.

As an example, farm size classes can be grouped in three aggregated classes: small, medium and large farms, according to the national context. If the purpose of the agricultural production (market integration) is not considered an important variable at national level or can be explained with other dimensions (farm size), the farm profile can be only based on the household/non-household sector distinction. Such a detailed classification is presented in the table 11 below.

### TABLE 11. DETAILED CLASSIFICATION OF FARM TYPES.

<table>
<thead>
<tr>
<th>Farm profile</th>
<th>Farm size</th>
<th>Commodity specialization/Farms specialized in:</th>
<th>Diversification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural holdings, from household sector</td>
<td>Small farms</td>
<td>Crops</td>
<td>Non-diversified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Livestock</td>
<td>Diversified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixed</td>
<td>Non-diversified</td>
</tr>
<tr>
<td></td>
<td>Medium farms</td>
<td>Crops</td>
<td>Non-diversified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Livestock</td>
<td>Diversified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixed</td>
<td>Non-diversified</td>
</tr>
<tr>
<td></td>
<td>Large farms</td>
<td>Crops</td>
<td>Non-diversified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Livestock</td>
<td>Diversified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixed</td>
<td>Non-diversified</td>
</tr>
</tbody>
</table>
The classification scheme can be organized with reference to some dimensions only, and they can be organized according to the needs of the data presentation and analysis. In figure 3 below, three typology dimensions are used: farm profile (only the household/non-household sector distinction), commodity specialization, and farm size (in three aggregated classes).
FIGURE 3. EXAMPLE OF CLASSIFICATION SCHEME USING THREE TYPOLOGY DIMENSIONS AND GROUPED CLASSES

DEFINITION OF AGRICULTURAL FARM (HOLDINGS)
LIST OF ACTIVITIES
THRESHOLD (IF DEFINED)

CIVIL PERSONS OR GROUP OF CIVIL PERSONS
(Private farms - Household Sector)

CROP FARMS
Small farms
Medium farms
Big farms

LIVESTOCK FARMS
Small farms
Medium farms
Big farms

MIX (CROP + LIVESTOCK) FARMS
Small farms
Medium farms
Big farms

JURIDICAL PERSONS
(Corporations, state farms - Non Household Sector)

CROP FARMS
Small farms
Medium farms
Big farms

LIVESTOCK FARMS
Small farms
Medium farms
Big farms

MIX (CROP + LIVESTOCK) FARMS
Small farms
Medium farms
Big farms
4.2. FARM TYPOLOGY USE

A Farm Typology (FT) may be used at national level upstream for sample design for statistical surveys, and downstream for the presentation and analysis of results. It classifies agricultural holdings into homogeneous groups and is often used to define the strata in the stratified sample design for the purposes of agricultural sample surveys.

On the other hand, the presentation of results by farm type facilitates sector analysis and the comparison of structural and economic results by region and farm type, and over time.

a. FT for smaller sample sizes

The use of stratified sampling is generally considered to improve the representativeness of the sample by reducing the sampling error. The stratified sample often requires a smaller sample size, which may save resources and time. Including sufficient units from each stratum makes it possible to analyse each individual stratum. Thus, more focused data analysis is possible at each farm-type level, as well as the comparison of the main technical and economic indicators between farm types, economic sizes or regions.

When FT is calculated, each agricultural holding from the existing agricultural census, population census or other list of farms is defined by farm type. This new farm characteristic is an important stratification variable for the sample design. Stratification by farm type at lower geographical level (for example, regions or AEZs) will enable a significant decrease in the sample size of agricultural sample surveys. The example of the EU’s Farm Accountancy Data Network (FADN)\(^1\) shows that with a sample size of approximately 1.6 % from the total population in the field of observation, representative results on farm structure and income for economic analysis by farm type may be obtained at both national and regional level and per main farm types.

When the FT is unavailable, other stratification criteria may be used (often based on the physical size of the main agricultural characteristics) or other sampling techniques may be applied. In such cases, good precision of the estimates of the agricultural indicators can be achieved; however, presentation and analysis by farm type would not be possible. The progressive calculation of the FT and the introduction of stratified samples by farm type will provide statisticians and data users with more refined samples and foster their capacity to analyse the results by farm type, thus better focusing policy design and evaluation.

b. FT for sample surveys data that are more relevant and better focused on the priorities of the policy agenda

Grouping farms by farm types provides a valuable possibility for making complex analyses by matching data from different sample surveys for holdings within the same farm type. This method in particular would facilitate the integration between different AGRIS modules and allow for complex data tabulations.

The major advantage of the FT lies in the presentation and analysis of the results from surveys that are designed using the FT for stratification purposes. The use of the same typology definitions over time makes it possible to analyse farm productivity and study trends per farm type, and to design models for evaluating the impact of different policy measures.

As an example, farm productivity, calculated as income per labour unit, may be compared per farm type, per region and through the years. More advanced analyses are possible at farm-type level, such as sector analysis, analysis of the economic development of the agricultural holdings, covering the physical and financial structure, labour and land intensity, etc., analysis of the differences between farm types, differences resulting from agro-ecological specifics, size, production methods used, etc., and modelling of the impact of new policy measures.

\(^1\) http://ec.europa.eu/agriculture/rica/methodology2_en.cfm
A large number of indicators may be calculated and analysed per farm type. The following are some examples:

- farm income and income components
- farm assets and liabilities
- share of paid and unpaid labour and labour costs
- share of rented land and rent price
- farm structure
- production and utilization of agricultural products (own consumption, farm use, sales)
- input and output prices

Once the FT has been built, it is necessary to organize and present the available data per farm type or group of farm types. The data that can be presented per farm type and the level of detail depends on the sample size, the availability and the quality of the data, as well as the applicability of different farm indicators. Figure 4 shows how some data may be collected and analysed for particular farm types, while they may not be meaningful for others.

**FIGURE 4. EXAMPLE OF CLASSIFICATION SCHEME AND SPECIFIC INDICATORS PER FARM TYPE.**
4.3. FARM TYPOLOGY FOR NATIONAL PURPOSES

In developing countries, there are several examples of farm classifications, usually related to a particular group of farms, a certain subnational area, and a specific programme or project; they often end with the end of the project. However, these classifications have illustrated that at national level, more fixed components are used as general (first) criteria for the FT, such as AEZs and crop or livestock mixes. Agricultural production systems are classified in details: rain-fed agriculture, irrigated agriculture, flood recession farming; production of food crops or cash crops; nomadic livestock and agro-pastoralism, etc.). For the purposes of different research efforts, access to market, share of family labour force and share of off-farm income are also among the variables used to classify households with agricultural activity.

The FT presented in these Guidelines can be seen as the basic framework for establishing one common national typology with policy relevance, to be regularly used for policy design and evaluation. The national typology should also be used when designing the samples of agricultural surveys, thus improving the efficiency of the statistical process and the quality of statistical data. Finally, using the FT as a frame defining the objectives, scope, coverage, dimensions and classification variables would provide a certain level of comparability between countries in the medium term.

According to their needs and data availability, countries may decide to not apply one typology dimension or another, or to further detail any one of them. For example, further details can be added to account for the agro-climatic zone, farm profiles or the production system diversity specific to different countries. On the other hand, data on the classification variables required to define individual dimensions may be missing, such that the entire dimension could not be included in the classification. Finally, data may be missing for one of the branches of the classification: for example, in many countries, there are data on agricultural holdings associated to households through different household surveys such as population censuses, living standard surveys, households’ budget surveys, etc. However, data on enterprises may not be available and therefore it may not be possible to classify the entire branch of agricultural holdings from the non-household sector.

Differences in relief, soil and climate conditions usually influence farming systems at regional level. It is highly recommended to use of some form of regional breakdown in national FT. Two main regional breakdowns can be used:

- Administrative regions
- AEZs

Administrative regions are often used in typology as the statistical data necessary for the calculation of classification variables is available at this level. The use of administrative regions is also preferred when policies are designed at administrative-region level.

However, the use of AEZs for the regional level of the FT would be more appropriate, as this delineation considers factors such as relief, soils, climate, etc. The regular production of statistical data on, for example, area, production and average yield of crops, number of livestock and animal production at AEZ level would be required.

The regions can be considered fifth dimension of the FT. Within each region, the same four dimensions and classification variables are used. If the regions are used as an FT dimension and if data are available at regional level, the average outputs per crop, scattered tree or head of livestock have to be calculated per region, as it is expected that the production yields and prices differ because of regional specificities.

Within each region and at national level, the FT may be used to define farm types by crossing all or some of the dimensions. Different sequences of the dimensions can be used to emphasize one aspect or another of the farm type (see the case studies in annex IV).
Some proposals for determining level 3 of the farm profile dimension

As mentioned in chapter 3.1, the farm profile dimension can be further detailed at level 3 according to the national context and needs, using additional classification variables that best determine the specific profiles to be identified.

The following profiles are often identified at national and regional level, there being no common internationally agreed definitions. They may be defined at national level as country-specific farm profiles:

• subsistence farms – often used in developing countries
• units with marginal agricultural activity – used in countries that apply a farm threshold
• hobby/leisure farms – often identified in developed countries
• family farms – identified in both developed and developing countries but with different definitions
• commercial farms – identified mainly in developing countries

Some of these farm profiles may overlap in certain countries or be insignificant in others. For example, subsistence farms are of particular interest to policy-makers in developing countries, while in developed countries, they may fall within units with marginal agricultural activity. Their definition may also significantly differ from one country to another. A family farm can be defined on the basis of the ownership of farm assets, prevalence of family labour force, etc. The farm profiles, therefore, must be defined according to the national context while respecting the exhaustivity and exclusivity criteria of classification.

Subsistence farms

Subsistence farms, by general understanding, are non market-oriented farms operated by households. The farm production is mainly for self-consumption, and any eventual surplus is directed to the market. In this sense, subsistence farming includes what is called *agricultura de excedente* (surplus agriculture) in some developing countries.

Subsistence farming is widespread in developing countries where the majority of rural households depend on agricultural activity for survival. Subsistence farms are usually self-sufficient on food; however, they generate low – if any – other income.

Subsistence farming is also practiced in developed countries. Although not as significant for rural households as in developing countries, it has similar features. According to the EU, subsistence farming relates to agricultural activity to produce food which is predominantly consumed by the farming household. The food produced is the main or a significant source of food for the farming household and little or none of the production is surplus and available for sale or trade. It is generally associated with a small farm holding size and family agricultural work as a part-time or supporting activity (Eurostat, Glossary, [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Subsistence_farming](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Subsistence_farming)). However, in some cases, subsistence farming is the main activity of at least one of the members of the holders’ household. Subsistence farms may occasionally use paid labour force; however, they would rarely employ permanent paid workers.

Subsistence farms differ from units with marginal agricultural activities and hobby farms because in subsistence farming, the related household crucially depends on its own agricultural production.

Example of criteria that can be used to define subsistence farms:

• Farm profile: agricultural holdings from the household sector producing mainly for own consumption
• Farm size: a threshold based on the level of agricultural output or sales may be applied
• Commodity specialization: the share of cash crops in the total agricultural output is low
• Diversification of the household: agriculture is the main source of income; the share of other income in the total household income is very low
Subsistence farms are usually small or medium mixed farms. A distinction between diversified and non-diversified farms may contribute to making a valuable analysis of this farm profile.

**TABLE 12. EXAMPLE OF TABULATION FOR SUBSISTENCE FARMS.**

<table>
<thead>
<tr>
<th>Subsistence farms</th>
<th>Small farms*</th>
<th>Medium farms*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversified</td>
<td>Non-diversified</td>
<td>Diversified</td>
</tr>
</tbody>
</table>

* According to national aggregation of farm size classes

**Units with marginal agricultural activities**

Some countries define a specific category of units producing agricultural products as units with marginal agricultural activity. In fact, the definition of agricultural holding is sufficiently broad to allow for definition of households with only a backyard or marginal farming activities as agricultural holdings. In these cases, it would be more accurate to speak of housework rather than farm work. In most countries, and especially in small towns and rural areas, it is common to find households that perform farming activities as an extension of domestic affairs, with small orchards, vegetable gardens, and small animal husbandry being frequent examples. These activities could be important for the diversification of the family’s food consumption, or they could even bring some monetary returns from eventual sales. In developed countries, these small units are not considered agricultural holdings and usually remain outside the scope of agricultural statistics. In developing countries, the situation may differ, as some countries do not even apply a low farm threshold and all units with some agricultural activities, regardless of size, are included in the population of agricultural holdings. For this reason, a particular category should be defined to cover those units. This category could be defined after an exhaustive agricultural census or a large sample survey has been carried out, and will form a separate farm type.

Operationally, implementation relies on the definition of a threshold related to the size of the agricultural operation. In many countries, a land-size threshold, combined with certain limits on the number of livestock according to type, total agricultural production or sales, are used. In other countries, the farm threshold is defined by the level of farm income or economic output from agriculture. In yet other cases, farms that produce only for own consumption of the household are also excluded. As a rule, units with marginal agricultural activities should be defined such that their cumulative contribution to the total agricultural area, livestock units and gross agricultural output of the country is also marginal.

The units with marginal agricultural activities may rely on off-farm activities for the majority of their household income or may even be inactive households (with no other economic activity), but with other sources of income such as social support and money transfers. They are usually not subject to agricultural policy, although they may be subject to social support policy.

Examples of criteria that can be used to define units with marginal agricultural activities are:
- Farm profile: agricultural holdings producing only for own consumption
- Farm size: a threshold based on the level of agricultural output or physical size (AAU, number of animals)

For countries that apply a cut-off threshold, these smallest units with agricultural activities are already excluded from agricultural statistics. At a minimum, an estimation of the number of these units and their share of the total agricultural area, livestock units and gross agricultural output is necessary. The presence of other sources of income (on-farm and off-farm) is valuable information to distinguish the most vulnerable households with agricultural activity.
TABLE 13. EXAMPLE OF TABULATION FOR UNITS WITH MARGINAL AGRICULTURAL ACTIVITY.

<table>
<thead>
<tr>
<th>Units with marginal agricultural activity</th>
<th>Agriculture is the only source of income*</th>
<th>There are other on-farm and off-farm sources*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small, mixed farms</td>
<td>Small, mixed farms</td>
<td></td>
</tr>
</tbody>
</table>

* Not FT classification; based on additional information on the household

Hobby/leisure farms
The profile of hobby farms is similar to the units with marginal agricultural activities, considering that they have similar expectations because of their light engagement in agriculture.

Hobby farms, also called lifestyle farms (Canada, New Zealand), are farms, usually small in size, whose agricultural activity is not the primary source of income. Some hobby farms may have relatively large areas (usually pastures) with grazing animals or horses kept for leisure. Often, hobby farms are not seen as businesses but as leisure activities, and are run on a not-for-profit basis.

Newlands provides the following description of hobby farming (Newlands, 2006): “[h]obby agriculture covers a wide spectrum, from backyard eggs-and-jam to large areas of grazing land. The main planks on which a definition can be made are money and labour: the hobby farmer’s income is largely made from off-farm work and the holding does not employ full-time labour.”

There may be an overlap between hobby farming and units with marginal agricultural activities as both may have part-time farmers, draw greater income from non-agricultural activities and consume the majority of the production within the household. The difference lies mainly in the motivation of the farmer and how the farmer identifies its agricultural activities.

Countries that use the notion of hobby farming have different approaches towards defining it. In some countries, it is a combination of indicators related to the importance of the farm work for the farmer, the level of gross farm revenues, the share of off-farm income, etc. In other countries, the distinction between units with marginal agricultural activities and hobby farms is defined by tax authorities based on a set of indicators. Finally, countries may directly ask farmers to identify themselves as hobby farms or as business operators during agricultural censuses or surveys.

Countries that do not define hobby farmers assimilate this type of farming to units with marginal agricultural activities or to agricultural holdings, depending on the size of the activity.

Examples of criteria that can be used to define hobby farms are:

- Farm profile: agricultural holdings from the household sector producing mainly for own consumption
- Farm size: a threshold based on the level of agricultural output or sales or physical size (AAU, number of animals)
- Pluriactivity of the holder and the holder’s family: farming is not the main activity of the holder (head of the household)
- Diversification of the household: agriculture is not the main source of income; and the share of other income (on-farm and off-farm) in the total household income is high.
Family farms
According to the definition discussed during the events for the International Year of Family Farming, declared by FAO in 2014 (http://www.fao.org/family-farming-2014/en/), family farming is a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production; is managed and operated by a family and is predominantly reliant on family labour.2

However, there is no one internationally endorsed definition of family farms, although family farms may be an important factor in many country and regional policies. In such cases, identification of family farms as a separate class of the farm profile dimension could be introduced. The selection of classification variables depends on the definition used and the availability of data. Often, the family relation between the manager and the holder of the agricultural holding, as well as the share of family labour, are used as classification criteria.

Households often coincide with families. However, if the family is considered in its broader concept as relation by blood, marriage or adoption, one family may consist of one or more households.

EXAMPLE 1.
Two brothers and their families live separately, not pooling their income and not consuming collectively. They are considered two separate family agricultural holdings, although they are part of the same family in a broader way.

EXAMPLE 2.
The two brothers belonging to two separate households have their own agricultural activities, in which they are independently responsible for the management and operations and would benefit from the profit and bare the losses, thus representing two separate agricultural holdings associated to individual households. They are also considered two separate family agricultural holdings.

EXAMPLE 3.
The two brothers belonging to two separate households have common agricultural activities in which they are jointly responsible for the management and operations and would both benefit from the profit and bear the losses, thus representing one agricultural holding associated to two individual households. They are also considered as one family agricultural holding.

Family agricultural holdings may be large, highly specialized and intensified, and behave as corporations. In developed countries, as well as in many developing countries, for various regulation, legislation and operational reasons, family farms may choose to register as legal persons. These are the cases of family-owned corporations or associations in which the majority of the farm assets are owned by the farm operator or members of the operator’s family. The family farm sector, therefore, does not coincide with the household sector as defined by the WCA 2020.

2 GSARS, 2015b, p. 88.
**EXAMPLE 1.**
A father and his son belonging to separate households decide to associate their agricultural activities and register as a legal entity (association, company, etc.).
They represent one family-owned company and one agricultural holding associated to a legal entity. This holding is also considered as one single family agricultural holding.

**Commercial farms**
The definition for commercial farms varies in different countries. These farms can be operated by legal persons or by households and may present all size, specialization and diversification classes. The use of one, some or all of them for tabulation depends on the concrete agricultural policy needs. In some countries, the legal status of the farm operator is considered to not be discriminating and the classification is done for the aggregated farm profile of commercial farms.

**TABLE 14. EXAMPLES OF TABULATION OF COMMERCIAL FARMS AT NATIONAL LEVEL.**

<table>
<thead>
<tr>
<th>Commercial farms</th>
<th>Small farms*</th>
<th>Specialized in crop production</th>
<th>Diversified</th>
<th>Non-diversified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Specialized in livestock production</td>
<td>Diversified</td>
<td>Non-diversified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixed farm</td>
<td>Diversified</td>
<td>Non-diversified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Medium farms*</th>
<th>Specialized in crop production</th>
<th>Diversified</th>
<th>Non-diversified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Specialized in livestock production</td>
<td>Diversified</td>
<td>Non-diversified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixed farm</td>
<td>Diversified</td>
<td>Non-diversified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Large farms*</th>
<th>Specialized in crop production</th>
<th>Diversified</th>
<th>Non-diversified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Specialized in livestock production</td>
<td>Diversified</td>
<td>Non-diversified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixed farm</td>
<td>Diversified</td>
<td>Non-diversified</td>
</tr>
</tbody>
</table>

In addition to national purposes, the FT may serve the needs of larger geographical regions and enable comparison of farm performance between countries, as well as a basis for elaborating regional development programmes. Two examples of regional FT classifications are given in annex II: the *Mercado Común del Sur* (Mercosur) definitions of family farming as a category for further policy support and the EU community typology of agricultural holdings, developed to support analyses of the structural characteristics of agricultural holdings and their economic results.
4.4. FARM TYPES IN THE SDG INDICATORS

As mentioned above, SDGs represent an international consensus of goals. Goal 2 – Zero hunger aims, among others, at doubling by 2030 the agricultural productivity and incomes of small-scale food producers – in particular women, indigenous peoples, family farmers, pastoralists and fishers – including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment. To ensure the monitoring of the achievement of this goal, a new international definition of “small-scale food producers” has been developed by FAO. The Small-Scale Food Producers would be the target population relevant to SDG indicators 2.3.1 and 2.3.2.

The methodology proposed in these Guidelines to measure economic farm size by total agricultural output can be used for the purposes of the definition of small-scale food producers, in the part related to economic size measured by agricultural revenue. The total agricultural output is a very close proxy to agricultural revenue, as both envisage the valuation of agricultural production at farm-gate price. The difference is that within the definition of small-scale food producer, the revenue should be calculated for one particular year, while for the purposes of the FT, the economic size is standardized and is computed on the basis of the average output over three to five years.

Small-scale food producers can be further classified using FT to identify farm types as specialized and non-specialized farms, diversified and non-diversified farms, those producing mainly for own consumption and those producing mainly for sale.

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3 https://unstats.un.org/sdgs/
Sources of data and data collection

In practice, countries have various sources that can be used for the establishment of FT at national or regional level. However, most of these sources raise data quality issues related to the coverage of the agricultural holdings’ population, accuracy of the collected data, frequency and timeliness of statistical output and accessibility of the sources. Two types of data are needed for the calculation of the FT’s classification variables: (i) data at farm level; and (ii) aggregated data at national or regional level (for data on yield by crops, animal production per animal, farm-gate prices, etc.).

In chapter 3, the main sources of data for the classification variables for each FT dimension are discussed, while in this chapter, two sources of data at farm level, with a certain degree of international harmonization, are discussed. Their use would ensure comparability between countries in terms of FT coverage, scope, concepts and definitions.

Finally, some advice on how to handle missing or low-quality data are provided, to support countries in the process of conceiving and developing FT for national purposes.

5.1. SUMMARY OF CLASSIFICATION VARIABLES IDENTIFIED FOR THE FARM TYPOLOGY

The next table summarizes the list of classification variables for the FT, the basic data required at individual or aggregated level and the main sources of information (previously discussed).
### TABLE 15. MAIN SOURCES OF DATA REQUIRED FOR THE FT.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Classification variables</th>
<th>Basic data required</th>
<th>Level</th>
<th>Correspondence with WCA 2020</th>
<th>AGRIS modules</th>
<th>Link to MSCD*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm status</td>
<td>V1. Legal status of the agricultural holder</td>
<td>Legal status of the holder</td>
<td>Individual (agricultural holding)</td>
<td>E0103</td>
<td>Core, Part 1.2</td>
<td>✔️</td>
</tr>
<tr>
<td></td>
<td>V2. Purpose of the agricultural production</td>
<td>What is the main purpose of the production of the holding (for sale or home consumption)?</td>
<td>Individual (agricultural holding)</td>
<td>E0107</td>
<td>Core, Part 1.3</td>
<td>✔️</td>
</tr>
<tr>
<td></td>
<td>V3. AAU of the holding</td>
<td>Total AAU of the holding</td>
<td>Individual (agricultural holding)</td>
<td>E0202</td>
<td>Core, Part 3.2</td>
<td>✔️</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cultivated area</td>
<td>Core, Part 3.1</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of animals present, disposed and acquired</td>
<td>Core, Section 4</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>V4. Economic size of the holding</td>
<td>Physical quantities produced of vegetal and animal production</td>
<td>Aggregated at national or lower regional level</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yield of crops</td>
<td>Core, Part 3.1</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prices at farm-gate</td>
<td>Core, Sections 3 and 4</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Technical information: fertility, mortality of newborn, length of production cycle, etc.</td>
<td>Core, Sections 3 and 4</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Area of crops</td>
<td>Individual (agricultural holding)</td>
<td>E0402</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of scattered trees</td>
<td>Individual (agricultural holding)</td>
<td>E0406</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of livestock per type</td>
<td>Individual (agricultural holding)</td>
<td>E0407</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>Product</td>
<td>V5. Main agricultural activity of the holding</td>
<td>Calculation based on V4 or farmer declarations on activity that makes a larger contribution to the total agricultural output of the holding</td>
<td>Individual (agricultural holding)</td>
<td>0110</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>specialization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversification</td>
<td>V6. Presence of other economic activities on the farm</td>
<td>Other on-farm economic activities of the holding</td>
<td>Individual (agricultural holding)</td>
<td>E0108</td>
<td>Core, Section 5</td>
<td>✔️</td>
</tr>
<tr>
<td></td>
<td>V7. Share of holding’s agricultural production in total farm income</td>
<td>Proportion of income from agriculture in total farm income</td>
<td>Individual (agricultural holding)</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The Minimum Set of Core Data that countries should aim to produce on an annual or multiannual basis to meet national and international policy needs; the MSCD is determined in the first pillar of GSARS.
From table 15 above, it is clear that the majority of the data would be available through an agricultural census, following the WCA 2020 (FAO, 2015) and farm surveys, following the AGRIS methodology (GSARS, 2018), and that they would be compiled as the MSCD proposed by GSARS, provided that the countries carry out agricultural censuses or farm surveys on a regular basis.

The technical coefficients (fertility, mortality of newborn, length of production cycle, etc.) necessary for calculating the average output per hectare and head and definition of the farm size of the holdings are not directly available from the main sources. If other sources are not available, small-scale surveys can be planned by the countries to estimate and update the technical coefficients.

Other sources must be investigated at national and regional level to fill the gaps in the basic data.

5.2. AGRICULTURAL CENSUS WITH CONSISTENT QUESTIONNAIRE

The agricultural census usually collects structural data from agricultural holdings and the majority of the classification variables needed for the FT may be directly included in the census questionnaire. However, the agricultural census rarely collects detailed production and price data and is not sufficient to provide all information necessary for computing more complex classification variables (such as the economic size of the holding). Data from other sources are used to compute the variables, such as average output per hectare and head for the purposes of calculation of classification variables for farm size, and commodity specialization dimensions of the FT.

The FAO WCA 2020 (FAO, 2015) provides the basis for the implementation of agricultural censuses in FAO member countries between 2016 and 2025, and supports countries in carrying out their national agricultural censuses using standard international concepts, definitions and methodologies.

The FT uses 10 out of 23 items recommended as essential (E) by the WCA 2020, at farm level. Although not obligatory, these items are considered the minimum data set that all countries should collect, regardless of the methodological approach used (WCA 2020, §7.9).

As mentioned above, not all classification variables of the FT dimensions are envisaged to be directly collected with the census. Items related to on-farm income, including the share of income from agricultural activities, must be collected with other sources. Furthermore, the census usually does not collect the production and productivity data needed to calculate average output per hectare and head for the estimation of the farm economic size. Other sources that produce this data at aggregated national or regional level are used.

There are two disadvantages to the agricultural census: (i) it is a very complex and expensive operation and is not conducted regularly by developing countries; (ii) often, in developing countries, the agricultural census covers only the household sector and public and private companies (non-household sector) are excluded.

The agricultural census is a useful source for the initial development of the FT; however, it is not a regular survey. Other surveys carried out on a more regular basis as sample surveys can be used for both the initial development and the updating of the FT classification.

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1 According to the literature review, p.15, half of the IDA countries did not conduct an agricultural census in the last 15 years.
The farm-level data of the agricultural census with FT is generally used to define the sampling frame for other agricultural surveys.

5.3. THE AGRIS METHODOLOGY

AGRIS (GSARS, 2018) is a ten-year integrated survey programme, organized as sample surveys in two types of modules:
- Core Module: yearly data collection on current agricultural production (crop and livestock) integrated with basic economic data and the main sociodemographic statistics on the members of the agricultural households (roster)
- Rotating Modules: thematic data to be collected with a lower frequency (two to five years): Economy, Labour, Production Methods & the Environment, and Machinery & Equipment.

All classification variables of the FT dimensions are envisaged to be collected with the AGRIS modules. AGRIS data can be also used to estimate the average output per crop, tree and livestock head necessary to calculate the farm economic size.

The AGRIS methodology covers the agricultural holdings in both the household and the non-household sector. Further details are given in annex III.

5.4. OTHER SOURCES AND DATABASES

A large number of other sources of data, with different level of coherence at national and international level, exist in countries. The same variable may be provided by more than one source. Individual countries should choose the most reliable source.

1) Population and housing census (PHC)

In some countries, the population and housing census (PHC) is carried out more regularly than the agricultural census, and usually collects data on the agricultural activity of the households. This information, albeit with certain quality and methodological considerations, can be used as a source for basic data such as agricultural land (usually in aggregated land categories) and number of livestock (usually per livestock type only) on the farm.

The main inconveniences of the PHC data are that: i) the definition of household used by the PHC does not always correspond to the definition of agricultural holding; ii) the PHC covers only households, while private and public companies are excluded; iii) the PHC usually does not collect detailed information on area per type of crop and number of livestock per category; and iv) as agricultural data are not the primary objective of the PHC, often, the relevant section is given a lower priority during data collection and processing, which can lead to major data quality issues.
2) Living Standard Measurement Study - Integrated Surveys on Agriculture (LSMS-ISA)
The Living Standards Measurement Study (LSMS) is a household survey program within the Surveys & Methods Unit of the World Bank’s Development Data Group. The Living Standards Measurement Study – Integrated Surveys on Agriculture (LSMS-ISA) is a household survey project established with a grant from the Bill & Melinda Gates Foundation and implemented by the LSMS team. It is applied in countries of sub-Saharan Africa. The frequency of data collection depends on the need for data and the availability of funds.

The LSMS-ISA provides more detailed information on the agricultural activity of the households, such as: area and production per crop, number of livestock and animal production, producer (farm-gate) price per agricultural product, use of agricultural production (self-consumption and sales), and the labour force used for the households’ agricultural activity.

The main inconveniences of the LSMS-ISA are that: i) the definition of household used does not always correspond to the definition of agricultural holding; ii) the LSMS-ISA covers only households, while private and public companies are excluded; and iii) the sample for the LSMS-ISA is small and the estimated variables are not always representative of the entire population.

3) National farm surveys and administrative data
Countries have specific national sources (statistical surveys or administrative sources) to compile agricultural statistical data sets at national and regional level. An inventory of these sources would enable identifying existing, overlapping and missing data and plan specific data collection activities, if necessary.

In particular, existing administrative sources and registers can be used to complete the missing data. If well-maintained and up-to-date administrative registers are available, they can be used to classify different subpopulations of agricultural holdings that are not subject to the national agricultural survey, or regarding which the data, collected from other sources, is not considered to be reliable. When administrative registers are used, they must first be evaluated for compliance with the FT definitions and concepts. At least the following must be evaluated:

- the definition of the unit of registration (household, agricultural producer etc.) and comparison to the definition of agricultural holding;
- the coverage or conditions for registration (size threshold, legal status, specific commodity, etc.);
- other characteristics or items collected by the register (area of crops, number of livestock, other economic activities, etc.);
- the frequency of updating of the registered data, data quality control measures and overall quality of the registered data; and
- the accessibility of the register’s individual records for statistical purposes.

4) Research institutions and extension services
Research and advisory institutions can usually provide the technical coefficients that can be used for the calculations as described in chapter 3. Technical coefficients must be used with caution, as in many cases, they may refer to the potential of the crop and livestock production in specific controlled conditions. If this is the case, the technical coefficients must be adjusted to reflect the reality in the field.

Usually, extension services and producer organizations with a highly practical orientation may provide reliable technical coefficients corresponding to different production systems.
5) New data collection
Specific surveys may be carried out based on a small sample of farms to collect the missing information. This is a good solution to fill in data gaps and provide a set of good-quality data.

If only data from the PHC and the LSMS-ISA are available, specific surveys on agricultural enterprises should be carried out and used to complete the agricultural holdings population.

5.5. HOW TO HANDLE MISSING DATA AND DATA QUALITY ISSUES

When developing these Guidelines on Farm Typology, the classification variables were selected considering two guiding principles:

The FT is to be build on and be integrated with the established statistical system; and

FT classification variables are determined by the trade-off between available data for a significant share of the world’s farms.

Even if the variables were selected from among those most commonly collected at farm level by countries worldwide and these variables were harmonized with FAO concepts and definitions, some of them may be incoherent, missing or of insufficient quality, in a given country.

This part of the Guidelines provides advice on how to handle these issues for each of the proposed FT classification variables. Different approaches are proposed on how to deal with current missing or low-quality data, according to different situations in the countries. Suggestions for improvement of the farm survey questionnaires for future data collection efforts are given, to ensure that the classification variables and the determination of the FT are estimated in a more methodologically sound manner.
Coherence between sources

According to farm structures, countries often carry out separate surveys for households with agricultural activity and for so-called large or commercial farms. Most agricultural holdings are usually covered by a sample survey of households with agricultural activities. Large farms that may be run by households, enterprises, cooperatives and institutional households (schools, hospitals, etc.) are often surveyed exhaustively. In practice, the questionnaires, and sometimes even the reference periods, of these surveys may differ significantly. This incoherence of sources makes it impossible to combine them to define the FT for the entire population of agricultural holdings. The following points must be considered to ensure coherence between sources:

- A clear definition of the coverage provided by each survey, to avoid duplication or omission of categories of agricultural holdings (the size or legal status of farms is often used to determine the limits between the subpopulations of agricultural holdings).
- It is necessary to set the list of indicators that will be estimated for the entire population. The data items to be collected in each survey may differ; however, they should enable estimation of the same indicator with the same definition (for example, milk produced on the farm can be collected as a total quantity produced in a 12-month period in large farms that keep records; in small farms, the annual production of milk may be estimated using the number of milking cows, the average milk collected per day and the number of days of milk collection per year).
- Likewise, it is necessary to set harmonized reference dates and periods for the data items to be collected and the indicators to be estimated (for example, the same reference day for the number of animals in the data sources used by small and large farms would avoid double counting or underestimation due to movement of animals).

V1. Legal status of the agricultural holder

Often, countries do not specifically collect information on the legal status of the agricultural holding and the holder. The following actions can be undertaken:

- Analyse the business register or trade register where the legal entities are registered to identify those with agricultural activity. Compare the list of farms from statistical surveys with the available register; individual records can be matched if the business number is collected and legal entities can be identified.
- If the business number is not collected, the name of the farm may also disclose the legal status of the agricultural holding and the holder. The holdings run by households would usually feature the name of the head of the household, while legal entities would be identified by the legal name of the enterprise, cooperative, etc.
- Finally, the question on legal status could be easily added to the questionnaires to collect this question directly from farmers in the future.

EXAMPLE FROM AGRIS CORE MODULE QUESTIONNAIRE, PART 1.2
- IDENTIFICATION OF THE HOLDING

| PART 1.2: IDENTIFICATION OF THE HOLDING |
| Q10. What is the legal status of the Holder? |
| [Fill in one circle only] |
| 1 Civil person/natural person |
| 2 Group of civil persons/natural persons |
| 3 Legal person |

| Q11. What is the legal status of the holding? |
| [Fill in one circle only] |
| 1 (Country-specific response option) |
| 2 (Country-specific response option) |
| 3 (Country-specific response option) |
V2. Purpose of the agricultural production of the holding

As previously defined in the Guidelines, the purpose of agricultural production may either be collected as a farmer declaration or calculated as the share of sales in the total agricultural output of the farm. The following issues were identified when testing the FT Guidelines:

- the question on the purpose of agricultural production is often not asked directly in the questionnaire;
- the quantity and value of sales is usually collected for crop production, livestock and animal production;
- the computation of total agricultural output per farm is usually feasible, but requires methodological assistance.

Considering the above, the following actions can be undertaken:

- decide on a minimum level of sales (according to the country’s economic conditions) above which the holding would be considered producing mainly for sale;
- compute the total agricultural output and the share of sales to define the purpose of agricultural production of the holding;
- the question on the purpose of agricultural production could easily be added to the questionnaires to collect this question directly from farmers in the future.

EXAMPLE FROM AGRIS CORE MODULE QUESTIONNAIRE, PART 1.3

– AGRICULTURAL ACTIVITY.

Q.29 What is the main intended destination of your agricultural production?

(Fill in one circle only)

- 1 Producing primarily for sale (selling 90% or more)
- 2 Producing mainly for sale, with some own consumption (selling more than 50% and up to 90%)
- 3 Producing mainly for own consumption, with some sales (selling more than 10% and up to 50%)
- 4 Producing primarily for own consumption (selling 10% or less)

V3. AAU of the holding

Data on the holding’s AAU is usually available. Certain quality issues should be kept in mind to ensure coherence of the data.

- All agricultural area used exclusively by the agricultural holding is included, regardless of the type of ownership of the land, including own, rented in, received as donation or used without titles and excluding the rented out, donated to others or unused agricultural area;
- Commonly used agricultural area (usually pastures) is not included;
- The area under all types of crop production is included: area of annual crops, seeds and seedlings, greenhouses, kitchen gardens or backyards, perennial crops, nurseries and permanent meadows and pastures;
- The area on which fast-growing crops are cultivated and more than one sowing and harvesting are done within a crop year should be recorded only once;
- The area of farm buildings, farmyards, forests, other woodland, aquaculture and other non-agricultural land of the holding is excluded.
V4. Economic size of the holding

For the purposes of defining economic size, it is necessary to calculate total agricultural output per farm. This variable is rarely collected directly from farms during a survey. However, the collection of a certain number of data items and their combination with other sources allows for its computation. These Guidelines propose the use of average output per hectare of crop and head of livestock category, which are applied to the farm data on area of crops and number of livestock. The result obtained for each farm is the total agricultural output of the agricultural holding, that is, its economic size expressed in monetary units.

To calculate the total agricultural output of a farm information on both crop and livestock activities is required. Often, specialized surveys collect either only crop data or only livestock data. Therefore, the FT is applied to agricultural censuses or to a combined farm survey such as AGRIS. Many countries carry out a combined annual, biennial or triennial survey that can be used for FT implementation and analysis based thereon. Such combined surveys usually collect data for each agricultural holding on area of crops per crop type, number of livestock per types and category, crop and animal production and utilization, etc.

The calculation of the economic size of the holding and, in particular, average output per hectare and head is data-intensive. The following data quality issues were identified when testing the FT Guidelines:

- missing or low-quality data on yield of crops that are not considered important in the country;
- missing or low-quality data on milk production;
- missing or low-quality data on technical coefficients such as productivity, mortality, and offtake ratio;
- missing data on farm-gate price per crop or animal production commodity; and
- data is rarely available for five consecutive years.

Often, data on crop and animal production that are considered not important are not collected at all, or with a highly uneven frequency. In other cases, the data collection and cleaning processes are of insufficient quality. Some data from agricultural surveys are not entirely cleaned because of the lack of capacity or time and, even if collected, remains unpublished and unused.

Considering the above, the following actions may be undertaken:

- decide the list of main crops and animal products for which the average output per hectare/head will be computed in the future and provide for the regular data collection and cleaning;
- compute the average output as the weighted average per hectare of land category, and apply it to crops from the relevant land category that are not on the main list;
- compute the average meat output per livestock type using the net offtake rate for livestock types that are not on the main list;
- use producer (farm-gate) price for the same or similar products from different regions, or the market price corrected with the transport and marketing costs;
- use less than five years to calculate average output; the output from one year considered “normal” may also be used.
V5. Main agricultural activity of the holding

The main agricultural activity of the holding can either be collected as a farmer’s declaration or calculated as the share of each activity in the total agricultural output of the farm. The following issues were identified when testing these Guidelines:

- the question on the main agricultural activity of the holding is often not asked directly in the questionnaire; in addition,
- the computation of total agricultural output per farm is usually feasible, but requires methodological assistance.

Considering the above, the following actions could be undertaken:

- classification of farms based on the presence of a certain level of different agricultural activities:

  **Example:**

  1. agricultural holdings with exclusively crop activities
  2. agricultural holdings with exclusively livestock activities
  3. agricultural holdings with mixed crop and livestock activities

**EXAMPLE FROM AGRIS CORE MODULE QUESTIONNAIRE, PART 1.3 – AGRICULTURAL ACTIVITY**

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q20. From an economic perspective, what is the holding’s main agricultural focus for the reference period?</td>
<td><img src="https://example.com" alt="Options" /></td>
</tr>
<tr>
<td>Q21. From an economic perspective, what is the main cropping activity?</td>
<td><img src="https://example.com" alt="Options" /></td>
</tr>
<tr>
<td>Q22. From an economic perspective, what is the main livestock activity?</td>
<td><img src="https://example.com" alt="Options" /></td>
</tr>
</tbody>
</table>
V6. Presence of other economic activities on the farm

The presence of other economic activities on the farm is proposed as a proxy for classification variable V7 for the definition of farm diversification. It is often collected at farm level and is easy to handle. It is important, however, to distinguish between on-farm and off-farm activities and consider only the first of these.

EXAMPLE FROM AGRIS CORE MODULE QUESTIONNAIRE, PART 5.1
– OTHER ACTIVITIES OF THE HOLDING

PART 5.1: OTHER ACTIVITIES OF THE HOLDING

Q01. Indicate other activities engaged in by the holding during the reference period. (Fill in all that apply)

<table>
<thead>
<tr>
<th>RESPONSE = [OTHER ACTIVITY]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. On-farm processing of agricultural products:</td>
</tr>
<tr>
<td>1.1. Grain milling: production of flour, grits or pellets of wheat, rye, oats, maize (corn) or other cereal grains</td>
</tr>
<tr>
<td>1.2. Rice milling: production of husked, polished, glazed or parboiled rice, production of rice flour</td>
</tr>
<tr>
<td>1.3. Processing and preserving of fruit and vegetables</td>
</tr>
<tr>
<td>1.4. Manufacture of crude vegetable oil: olive oil, rapeseed oil, palm oil, sunflower seed oil, cottonseed oil, rape, colza or mustard oil, linseed oil, etc.</td>
</tr>
<tr>
<td>1.5. Manufacture of wine</td>
</tr>
<tr>
<td>1.6. Distillation of spirit drinks</td>
</tr>
<tr>
<td>1.7. Manufacture of tobacco products (cigars, chewing tobacco, etc.)</td>
</tr>
<tr>
<td>1.8. Processing and preserving meat</td>
</tr>
<tr>
<td>1.9. Manufacture of dairy products</td>
</tr>
<tr>
<td>1.10. Manufacture of leather and related products</td>
</tr>
<tr>
<td>1.11. Selling of holding’s products at the market/shop (incl. preparation, packaging and transport of processed products)</td>
</tr>
<tr>
<td>1.12. Production of forestry products</td>
</tr>
<tr>
<td>1.13. Production, processing and preserving of fish, crustaceans and molluscs</td>
</tr>
<tr>
<td>1.14. Production of fish, crustaceans and molluscs</td>
</tr>
<tr>
<td>1.15. Processing and preserving of fish, crustaceans and molluscs</td>
</tr>
<tr>
<td>1.16. Production of renewable energy</td>
</tr>
<tr>
<td>1.17. Contractual work for other holdings using the production means of this holding</td>
</tr>
<tr>
<td>1.18. Accommodation, restaurant, catering and other leisure/educational activities</td>
</tr>
<tr>
<td>1.19. Making handicrafts</td>
</tr>
<tr>
<td>1.20. Training of animals</td>
</tr>
<tr>
<td>1.21. Management and/or administration for the agricultural holding</td>
</tr>
<tr>
<td>1.22. Other (specify)</td>
</tr>
<tr>
<td>0. None</td>
</tr>
</tbody>
</table>

V7. Share of holding’s agricultural production in total farm income

The share of the holding’s income from agricultural production in the total farm income may be computed if detailed economic data from the farm is available. Usually, large commercial farms do bookkeeping and the data could be directly derived from their accounts. For small and medium farms, usually run by households, the data may be collected in special budget or living condition surveys. However, these surveys are usually done on a small sample and are not necessarily coherent with agricultural surveys. The following approaches could be adopted, based on the data sources available in the country:

i. collect the available data from farms with bookkeeping and use V6 to define the diversification of small and medium farms without bookkeeping;

ii. collect the available data from farms with bookkeeping and use a special question on the importance of other activities of small and medium farms without bookkeeping;

EXAMPLE FROM AGRIS CORE MODULE QUESTIONNAIRE, PART 5.1
– OTHER ACTIVITIES OF THE HOLDING

Q02. Identify the contribution of the [OTHER ACTIVITY] to the holding’s total income during the reference period. (Fill in one circle only)

<table>
<thead>
<tr>
<th>RESPONSE = [OTHER ACTIVITY]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Significant</td>
</tr>
<tr>
<td>2. Marginal</td>
</tr>
</tbody>
</table>

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iii. collect the available data from farms without bookkeeping and collect information on production, utilization and value of sales and receipts from other activities.

The first two approaches are relatively easy to apply and can be included in an annual farm questionnaire. The third one is usually difficult to collect from farmers that do not keep records of their economic activities. Such data should be collected every three to five years and may require multiple visits to the farms for data collection during the reference period.

As an example, the AGRIS Core Module envisages the collection of data on production and utilization for the main other economic activities: fishery, aquaculture and forestry, on an annual basis. The income from other activities should be collected every three years with the Economy module.

EXAMPLE FROM AGRIS ECONOMY MODULE QUESTIONNAIRE, PART 2.5 – ON-FARM PROCESSING OF AGRICULTURAL PRODUCTS

### PART 2.5: ON-FARM PROCESSING OF AGRICULTURAL PRODUCTS BY THE AGRICULTURAL HOLDING

<table>
<thead>
<tr>
<th>Q07: Was there any ON-FARM PROCESSING of AGRICULTURAL PRODUCTS by the agricultural holding in the last agricultural year?</th>
</tr>
</thead>
<tbody>
<tr>
<td>° Yes → Report the gross value of processing, include landlord’s share, marketing charges, taxes, transportation, etc.</td>
</tr>
<tr>
<td>° No → Go to Q08</td>
</tr>
</tbody>
</table>

* Include income received for all types of sales, including production contracts.

**Includes**
- Grain milling: production of flour, etc. of wheat, rye, oats, maize (corn) or other cereal grains
- Rice milling: production of husked, milled, polished, glazed, parboiled or converted rice; production of rice flour
- Processing and preserving of fruit and vegetables
- Manufacture of crude vegetable oils: olive oil, soyabean oil, palm oil, etc.
- Manufacture of wines
- Distillation of spirit drinks
- Manufacture of tobacco products (cigars, chewing tobacco, etc.)
- Processing and preserving meat
- Manufacture of dairy products
- Manufacture of leather and related products

### Issues and compromises in the building the FT

As mentioned before, the FT is a multidimensional classification of farms, where more than one classification variables is used to place farms in homogeneous groups, while meeting both the exclusivity and the exhaustivity criteria. These principles also hold for the one-dimensional classification of farms using one or two (in the case of the farm profile dimension) classification variables. This means that each farm must be unambiguously classified into one of the established classes for each classification variable. Some issues to be addressed are the following:

- **Landless agricultural holdings may be omitted from the classification if the lowest farm physical size class is defined as “agricultural area utilized greater than 0 and less than 1 ha”.** A special class for landless farms can be provided, or the lowest class could be defined as “agricultural area utilized equal to or greater than 0 and less than 1 ha”.

- **In case of item non-response during the survey, information may be missing on one or more items, including those used for the computation of classification variables.** For example, if the answer on the question on the holdings’ main agricultural activity is missing for some farms, it must be imputed using the most relevant imputation method (data from other available sources for the same reference period, from a previous survey for the same survey unit, from the nearest neighbour, etc.).
Building an FT requires a clean data set with individual farm records. Such a data set may result from one integrated source (usually a statistical survey) or a combination of two or more data sources. In all cases, however, it should contain:

- all agricultural holdings (or a representative sample thereof) as defined in the FT scope;
- variables that enable computation of FT classification variables;
- variables describing the farms that will be used for analysis.

One of the most common issues arising during data cleaning is missing data or bad quality of the reported data, such as quantities produced and sold or prices for commodities used for own consumption. In such cases, some of the classical imputation methods may be used: for example, the missing information on prices for commodities used for own consumption could be replaced by the regional average farm-gate price; bad quality data for cow milk production in one farm can be replaced by data from the closest holding with a similar number of cows, from the same region and using the same production system, etc.

If the data is missing for most of the agricultural holdings, and there is no suitable proxy for a given classification variable, the relevant typology dimension should not be used when determining the FT.

Finally, the FT is an important tool within an integrated agricultural statistics system and as such, may require some years to be fully developed, based on a sound methodology and with data of a sufficient quality. Countries should not be discouraged by an initially high level of missing or low-quality data, but should analyse the situation and provide for the collection of the necessary data items and measures to improve their quality. Countries may start with fewer FT dimensions, less detailed classes in each dimension and using proxies for the proposed classification variables. In the following years, when more data are available, the dimensions and classes will be further developed. The list of indicators that will be produced and presented by farm type may also be very limited in the beginning of the use of the FT and progressively become more comprehensive and relevant to specific policy needs at national and regional level.
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References


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GUIDELINES FOR DEVELOPMENT OF A CLASSIFICATION SYSTEM RELATED TO FARM TYPOLOGY
Use of farm specialization in the evaluation of sustainability and profitability of agricultural holdings

The identification of dimensions to take into account is a concern that arises naturally when defining a typology.

Among the dimensions to consider for the FT, “specialization” should not be neglected. Specialization is related to the type of the main activity in which the holding is involved. In fact, in the practice of agricultural activities, three main categories are to be distinguished:

- crop production;
- livestock; or
- a combination of both

Authors or practitioners often inquire upon the need to integrate specialization into the definition of a typology. Because the typology is to address constraints in the agricultural sector through policy intervention and decision-making, the distinction based on specialization is important. Indeed, even the sustainability and the profitability of any production activity is evaluated through performance indicators. Depending on whether the holding is involved in a given activity, the calculation of a performance indicator is based on different variables. Therefore, it is advisable to clearly distinguish these activities even if they may be conducted in combination with one another.
Three examples are given below to further illustrate these concepts.

1. Measurement of economic size

*For crop production:*

- land is an important factor of production; and
- the size of the plot cultivated provides an evaluation of the size of the activity

*For animal production*

- The size of the activity is evaluated through reference to the number of live animals (size of herd).
- In addition, the land or plot is not a direct factor of production (rather, it is indirect, because of the crop production needed to feed the animals).
- The size of the plots reserved for animal production cannot be a good indicator, because the available plot could be used only as a pen to keep the animals – which does not impact on animal production.

From this point of view, depending on the purpose of the type of intervention to be made, the specialization of holdings should be clearly distinguished to target the real population.

2. Measurement of productivity

Another example is the measurement of productivity. Indeed, as the process of production and the factors of production are not same, the variable to be taken into account to assess productivity are not the same.

Productivity is defined as a ratio, in terms of volume or quantity, between productions (output) and the resources (input) used to obtain these productions.

In crop production. Crop yield is one of the indicators of productivity. This indicator is the ratio between the area cultivated (or harvested) and the quantity produced (or harvested). In this case, land plays a key role in this evaluation as it is the main factor of production (other dimensions, such as quantity or quality of seed used, are seen below).

In livestock. In the case of livestock, one approach towards measuring productivity is the ratio of the quantity (usually expressed in kg) per capita (in terms of size of the herd) of animal production obtained in one year, by species.

3. Information to be collected

One of the main reasons to distinguish between those activities is the information collected. The example below, extracted from the tools designed by the Global Strategy team for livestock statistics and cost of production, could be illustrative. In table A1.1, specific information collected is compared, to address issues related to each activity.
<table>
<thead>
<tr>
<th><strong>Livestock</strong></th>
<th><strong>Crops</strong></th>
<th><strong>Comments</strong></th>
</tr>
</thead>
</table>
| **Animal health**  
• Causes of death  
• Veterinary services | **Plant protection**  
• Products | This is information collected on causes of death of animals during the last six months. For crops, information on the use and cost of plant protection products will be collected in one agricultural year. |
| **Feeding practices**  
• Animal feed by types | **Inputs**  
• Seeds  
• Fertilizer | For livestock, information on feed will be collected, while for crops, information on the use and cost of inputs such as seeds and fertilizer will be collected. |
| **Water practices**  
• Livestock water drinking sources | **Water practices**  
• Water use for irrigation  
• Cost of water used (overhead expense) | Information on water use is covered for both livestock and crops. For livestock, the main focus is on the drinking sources of animals while for crops, it could be sought, for example, to establish the total cost of water used for irrigation. |
| **Livestock labour costs**  
• Family labour  
• Hired casual labour  
• Hired temporary labour  
• Hired permanent labour | **Crops labour costs**  
• Family labour  
• Hired labour (collectively) by activity | Information on labour is also captured in livestock and in crops. In livestock, information on family and hired labour is collected; for hired labour, it is collected individually for each type of hired labour (casual, temporary and permanent). In crops, information for both family and hired labour is collected by activity. The activities on crops include land preparation, planting, weeding, harvesting, etc. |
| **Hired agricultural services**  
• Land preparation and seeding  
• Application of fertilizer  
• Application of plant protection products (PPPs)  
• Harvesting  
• Transport  
• Threshing and shelling  
• Grading and packaging  
• Storage services | | Information on hired services refers to agricultural services hired for crops. The services include land preparation, application of fertilizer, PPPs, harvesting, etc. Not applicable to livestock. |
| **Farm assets**  
• Machinery and equipment for livestock (feed mixers, milking equipment, etc.) | **Farm assets**  
• Machinery and equipment for crops (tractors, ploughs, hoes, etc.)  
• Irrigation equipment (sprinkler, water pump/borehole, etc.) | Information on farm machinery and equipment is collected for both crops and livestock, but not for the same use. |
| **Building and infrastructure**  
• Permanent structures used for livestock (cow-shed, kraal, pig sty, etc.) | **Building and infrastructure**  
• Permanent structures used for crops (storage facilities, processing facilitates, etc.) | Information on farm buildings and infrastructure is collected for both crops and livestock, but not for the same use. |
Examples of regional Farm Typology classifications

Two commonly used regional typology classifications are presented in this annex. The Mercado Común del Sur (Mercosur) worked in particular on definitions of family farming as a category for further policy support organized under the Reunión Especializada de la Agricultura Familiar del Mercosur (REAF). The EU has applied community typology of agricultural holdings with common concepts and definitions since 1985. The EU FT is currently based on three dimensions: economic size, type of farming and importance of other gainful activities on the farm.

Mercosur. The Common Market Group, the highest body in the Mercosur directorate, defines the following common criteria for identifying family farms: i) the labour engaged on the farm will be primarily family members, with limited employment of hired workers; ii) the family shall be directly responsible for the farming activities and shall live either on-site or nearby; and iii) the production resources used shall be compatible with the family’s working capacity and the activity developed, and the technology employed should be in keeping with each country’s situation. The four countries incorporated thresholds of minimum share of income from agriculture of 50 percent; the figure for Brazil was 70 percent.

The regional categorization of the family farms initiated by Mercosur is still at an early stage of development. The FT proposed by these Guidelines aims at covering all agricultural holdings. In the case of Mercosur, countries would be expected to be able to classify also non-family farms into homogeneous groups. On the other hand, the Mercosur definition of family farms requires further detail on family or non-family labour usage, level of agricultural income, etc. The farm profile dimension of the FT suggests further detailed classification, to be able to define the family farm. An optional classification variable such as “Share of the family labour force in the total labour force” could be used.

Mercosur is the body responsible for deciding upon the variables for the classification of family farms for their regional purposes; however, for the sake of articulation with the FT proposed by these Guidelines, the regional classification could be designed to enable aggregation to at least the first level of the farm profile dimension (see Figure A1.1).

1 See GSARS, 2015b, p. 77, box 6.
On the other hand, the share of income from agriculture is a more advanced method of estimating income diversification. Therefore, the variable describing the share of income from agriculture can be used when classifying farms from Mercosur based on the fourth dimension, *Diversification*, for the purposes of the FT.

Provided that Mercosur also includes dimensions related to farm size, access to market and commodity specialization, the FT farm types can be produced for the Latin America and Caribbean region, specifying the different classification variables used for certain dimensions.

### FIGURE A1.1. CLASSIFICATION SCHEME FOR THE FT OF MERCOSUR COUNTRIES.

![Classification Scheme Diagram]

**European Union.** The EU typology is perhaps the best example of regional typology. It is implemented by all 28 EU Member States and is widely used for policy-making, analysis, research and improved efficiency of statistical sample surveys. The EU typology is based on economic size and farm specialization. Since 2010, the growing importance of income from gainful activities directly related to the holding (other than agricultural activities), a new classification variable related to the other gainful activities (OGA) has also been included.

The EU farm typology does not differ between *farm profiles*; however the *Legal personality of the holding* characteristic collects information on whether the legal and economic responsibility of the holding is assumed by a natural person, a group of natural persons or a legal person. Access to the market is measured by the characteristic *Destination of the holding’s production*, considering only the first sub-characteristic: “[the] household consumes more than 50% of the value of the final production of the holding (Yes/No)”.

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The type of farming and the economic size of the holding are determined on the basis of an economic criterion according to which the standard outputs (SOs) per ha of each crop and each head of category of livestock are used. The SOs are based on average values over a reference period of five years, and are subject to regular updating. The SOs are similar to the average gross production of crops and livestock proposed by these Guidelines. They mainly differ in terms of the level of detail (crops and livestock categories) and to some extent in the methodology of calculation. SOs also include the replacement value of the livestock and permanent crops. Therefore, the total SO of the holdings and the share of each production can also be used for the Farm size and Commodity specialization dimensions in the framework of the FT proposed by these Guidelines.

The fourth dimension, Diversification, may be measured by the Importance of the other gainful activities (OGA) of the holding characteristic, defined as the share of the OGA turnover in the total turnover of the holding (including direct payments). Depending on this estimated OGA share, farms are classified according to three percentage bands (from 0 to 10 percent, from 10 percent to 50 percent, more than 50 percent).

All characteristics mentioned above are part of the List of farm structure survey characteristics (Annex III) of Regulation (EC) No 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No 571/88. The characteristics are collected by all 28 EU Member States with the agricultural census, conducted every ten years, and with the Farm Structure Survey, held every three years.

The farm types defined in chapter 3 of these Guidelines may also be produced for the EU countries, specifying the specific measurement of the farm size and diversification.

For comparison reasons, it is always useful to recall that the EU countries apply a farm threshold that allows for excluding from agricultural statistics small units that altogether contribute 2 percent or less to the total AAU, excluding common land, and 2 percent or less to the total number of farm livestock units. The great majority of these small units are associated to households and can be considered minor agricultural holdings, according to the farm profile dimension of the farm typology. However, detailed data on their structure is sparse if not inexistent.
THE NEED FOR AN INTEGRATED SURVEY SYSTEM

In many countries, agricultural surveys are conducted on an ad hoc basis without an overall statistical programme, strategy, or links to a Master Sampling Frame (MSF). In these cases, it is difficult to integrate data from various surveys for further analysis. In the absence of structural data for the entire agricultural sector that provide the basis for analysing the characteristics of farms, the division of the production of crop and livestock data – often using different sampling frames and surveys with multiple governmental organizations – leaves no opportunity to compare and measure the impact of an action within or between agricultural subsectors.

The GSARS (World Bank, FAO & UN, 2011) suggests that an integrated statistical system could resolve these problems by reducing the duplication of efforts, preventing the release of conflicting statistics, and ensuring the best use of resources. Methods, concepts and classifications can be standardized and allow for more systematic data collection across sources. These practical advantages of integrated data systems, together with the increasing need for reliable and comparable data in a context of globalization and international concern, points to the need for integrated national statistical systems.

Indeed, GSARS developed the AGRIS methodology (GSARS, 2018), which proposes a ten-year modular data collection scheme based on an MSF (GSARS, 2015c), ensuring data coherence in time and among thematic sets of core variables.
OVERVIEW OF AGRIS

AGRIS is a farm-based modular multiyear sample survey program that aims to complement other relevant initiatives, such as the World Bank LSMS-ISA, and to scale up these global efforts. As one of the main features of cost-effective methods, AGRIS is designed to help national agencies accelerate the production of quality disaggregated data on the technical, economic, environmental and social dimensions of agricultural holdings. AGRIS builds on the previous work of GSARS, presenting a unique opportunity to channel these methodological innovations and achieve real effects on data systems on the ground. AGRIS, being a ten-year integrated survey program, lays the foundations for the creation of an efficient agricultural statistical system. Together with the agricultural census that it complements, a versatile agricultural market information system, and an appropriate use of remote sensing and administrative data, AGRIS is a cornerstone for the establishment of a comprehensive rural information system. AGRIS is designed to serve an integrated national statistical system. It is composed by a Core Module and a series of four Rotating Modules. Each module measures different key aspects of the agricultural sector and is fielded with different frequencies. The AGRIS Core Module is an annual sample farm survey having the main objective of measuring a key set of indicators related, in particular, to the volume of agricultural production (crop, livestock, forestry, fishery and aquaculture). In addition, the Core Module measures the key social, economic and technical dimensions of the holding. In addition, a series of Rotating Modules will take place at varying frequencies, when possible based on the samples of the Core Module. These Rotating Modules bring additional knowledge on thematic domains: Economy, Labour, Production Methods and the Environment, and Machinery, Equipment and Assets. AGRIS was mainly conceived for use by developing countries and is being tested in some of them. The link with SDGs is acknowledged (UN, 2017), the proposed set of AGRIS Generic Questionnaires will generate basic data for monitoring the relevant SDGs. Among the 232 SDG indicators, AGRIS provides essential and direct information for four SDG indicators and essential but indirect information for another 15 SDG indicators.

The AGRIS cycle

AGRIS is synchronized with the agricultural census and operates over a ten-year cycle. AGRIS seeks to decrease the burden of conducting censuses by scheduling the collection of thematic data over this period. This will contribute to a more regular flow of data, which would be more in line with the limited capacities currently in place for the production and use of statistics. AGRIS consists of a collection of questions that can be classified into one of two main categories: a core section and a rotating section. The core section (also referred to as the “Core” or “Core Module”) is an enhanced production survey that also focuses on a range of different themes, which remain largely the same in each survey round. The rotating section (which comprises several “Rotating Modules”) is devoted to specific themes, the implementation frequency of which will vary among countries with different agricultural systems and data demand priorities. The following table summarizes a possible module flow for the four recommended Rotating Modules: “Economy”, “Labour”, “Production Methods and the Environment”, and “Machinery, Equipment & Assets”. The financial and human resources required to sustain and implement such an arrangement is relatively stable over the ten-year cycle, making it a viable set-up for a data-producing agency. The flexible, modular nature of AGRIS makes it easy to modify this proposed setting and thus enhance its national relevance and cost-effectiveness. Additional Rotating Modules may be added to respond to additional specific data needs.

To enhance respondent recall and provide timely information for market efficiency and decision-making, data collection activities could be conducted several times during the year. This is particularly true for the Core Module in countries with several harvest periods. Rotating Modules, in particular the Economy and Labour Modules, could also require several waves of data collection during their years of implementation. Subsampling plans could be used to accommodate budget constraints, while producing more frequent data with different levels of statistical significance. The use of Computer-Assisted Personal Interviewing (CAPI) technologies is recommended to improve data quality and timeliness.

AGRIS covers different technical, economic, environmental and social dimensions of agricultural holdings through its Core Module and its four Rotating Modules.

AGRIS collects sex-disaggregated data on key topics through both the Core and the Rotating Modules. This entails a more refined identification of male- and female-headed households and will help to assess women’s contribution to agriculture through labour, and their access to and control of productive assets, resources and services. More details on the topics covered can be found in GSARS (2017).
AGRIS and the Farm Typology

As explained in these Guidelines, the FT is created on the basis of individual data (microdata) on agricultural holdings. As such, the FT may be applied to the individual data from AGRIS, while on the other hand, data obtained from AGRIS can be used to calculate the more complex classification variables. The FT is designed in such a way that all classification variables are available in or can be derived from the AGRIS Core and Rotating Economy Modules.

The AGRIS Core Module

In line with the overall AGRIS strategy, at the foundation of AGRIS is the AGRIS Core Module. It is an annual sample farm survey having the main objective of measuring a key set of indicators related, in particular, to the volume of agricultural production and to produce the main annual indicators linked to agricultural production:

• Main productions (quantities and yields)

In addition, the Core Module includes items related to:

• Structures of production (legal framework, structural and conjunctural difficulties)
• Means of production (labour force, land use, livestock)
• Economy (prices, income, information, other gainful activities)
• Demographic and social aspects of households linked to agricultural activities

The Core Module data items include:

<table>
<thead>
<tr>
<th>Identification and general characteristics of the holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location, holder, manager, respondent, land tenure, main activity, main destination</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Production methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>General, crop production methods, livestock production methods</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agricultural productions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crops: production during the reference period, by harvest</td>
</tr>
<tr>
<td>Crops: intentions for the next 12 months</td>
</tr>
<tr>
<td>Livestock: number of animals and herd’s movements</td>
</tr>
<tr>
<td>Meat, milk, eggs and other animal products</td>
</tr>
<tr>
<td>Livestock: intentions for the next 12 months</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aquaculture and fisheries</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Forestry</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other activities of the holding</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production shocks and coping mechanisms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Demographics [HH-sector AH only]</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour input on the holding by holder/household members and external workers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Household dwelling and assets [HH-sector AH only]</th>
</tr>
</thead>
</table>
**SECTION 1: THE HOLDING**

**PART 1.1: SURVEY PREPARATION**

Surveyor first name: [ ] Surname: [ ] Surveyor number: [ ]

Start time of the survey: [ ] hour [ ] minutes

Questions Q01 and Q02 below will be answered by the surveyor.

Q01. Did I find a farm at the same address or same name?
   - [ ] No → Go to Section 9. Explain in the comments box how you tried to find the holding and stop the questionnaire.
   - [ ] Yes

Q02. Did I find somebody from the holding who accepted to answer?
   - [ ] No → Go to Section 9. Explain in the comments box how you tried to obtain acceptance and why the person does not want to answer and stop the questionnaire.
   - [ ] Yes → Introduce the survey using the text below:

Q03. Record the following information about the respondent.
   - Q03a First name: [ ]
   - Q03b Surname: [ ]
   - Q03c Sex
     - [ ] 1 Male
     - [ ] 2 Female
   - Q03d What is your function on the agricultural holding?
     - [ ] 1 Holder (legal and/or economically responsible for the holding)
     - [ ] 2 Co-holder (legal and/or economically co-responsible for the holding)
     - [ ] 3 Manager (responsible for the day-to-day decisions on the farming operations)
     - [ ] 4 Employee or Household member working on the holding
   - Are you able to answer questions for the agricultural holding?
     - [ ] 0 No → Find another survey respondent and go back to Q02.
     - [ ] 1 Yes
   - Q03e Respondent's address (street): [ ]
   - [ ] Respondent's address (village, town): [ ]
   - Q03f Telephone number (cell phone): [ ]
   - Q03g Telephone number (landline): [ ]
   - Q03i E-mail address: [ ]

Q04. Is the holding currently growing any crops or fruits, or raising animals, or did it do so during the reference period?
   - [ ] No → Go to Q05.
   - [ ] Yes → Go to Q07.

---

**TEXT TO READ:**

I represent the [SURVEY INSTITUTE]. We are conducting a survey about agricultural production in all regions of [COUNTRY]. You are aware that people speak much about the current situation of agriculture in [COUNTRY]. To have an exact idea of what is really going on, there is no other way than to survey the conditions of thousands of holdings in various categories. Only after summarizing all of these responses can we have a real picture of the agriculture of [COUNTRY].

For that purpose, [number of] holdings have been chosen at random as in a lottery. One of these holdings proved to be yours. The authenticity of the results of the whole survey will depend on your sincerity and exactness when answering the questions of this questionnaire on the activities and production of your holding.

We assure you that your personal responses will not be disclosed and after all these questionnaires are processed by a computer, they will be used only in a summary way.

If you have any questions in connection with this survey, you are welcome to telephone the number indicated on the visit card of our organization that I leave for you here.

I express my gratitude for your participation in this survey in advance.

---

**TEXT TO READ:**

This survey collects information about the means of production of agricultural holdings in the whole country and whatever the holdings’ sizes. Questions will focus mainly on areas used, crops and fruit production, animals raised, meat, milk and eggs produced, persons working on the holding, other activities of the holding, income, expenditures and shocks. The reference period for the survey is the last complete agricultural year (country-specific start date and end date). (Note: if the survey is being conducted near the end of the current agricultural year, this will be the reference period).
Q05. Has the holding ceased its activity without any transfer of its means of production?
   0 No → Go to Q07.
   1 Yes → Go to Section 9: Explain the situation in the comments box and stop the questionnaire.

Q06. Will the holding resume its activity?
   0 No → Go to Part 1.2 Q10.
   1 Yes

Q07. Are there any changes concerning the information known about the holding?
   0 No → Go to Part 1.2 Q10.
   1 Yes

Q08. What changes occurred?
   [Fill in one circle only]
   1. Change of legal status → Go to Part 1.2 Q10.
   2. Transfer of all means of production to another single holding → Go to Part 1.2 Q10.
   3. Transfer of all means of production to several holdings → Go to Q09a.
   4. Fusion or merger with one or several other holdings → Go to Q09b.
   5. No change in legal status or address but some information must be corrected → Go to Part 1.2 Q10.

Q09a. How many new holdings were created with the means of production of the original holding?
   [Go to Part 1.2 Q10 to record answers of the holding having the same address as the previous one or, if not possible, the holding having acquired the main part of the means of production.]

Q09b. How many other holdings merged with the original holding?
   [Go to Part 1.2 Q10 to record answers of the holding having the same address as the previous one or, if not possible, the holding having acquired the main part of the means of production.]

Q05. Has the holding ceased its activity without any transfer of its means of production?
   0 No → Go to Q07.
   1 Yes → Go to Section 9: Explain the situation in the comments box and stop the questionnaire.

Q06. Will the holding resume its activity?
   0 No → Go to Part 1.2 Q10.
   1 Yes

Q07. Are there any changes concerning the information known about the holding?
   0 No → Go to Part 1.2 Q10.
   1 Yes

Q08. What changes occurred?
   [Fill in one circle only]
   1. Change of legal status → Go to Part 1.2 Q10.
   2. Transfer of all means of production to another single holding → Go to Part 1.2 Q10.
   3. Transfer of all means of production to several holdings → Go to Q09a.
   4. Fusion or merger with one or several other holdings → Go to Q09b.
   5. No change in legal status or address but some information must be corrected → Go to Part 1.2 Q10.

Q09a. How many new holdings were created with the means of production of the original holding?
   [Go to Part 1.2 Q10 to record answers of the holding having the same address as the previous one or, if not possible, the holding having acquired the main part of the means of production.]

Q09b. How many other holdings merged with the original holding?
   [Go to Part 1.2 Q10 to record answers of the holding having the same address as the previous one or, if not possible, the holding having acquired the main part of the means of production.]
PART 1.2: IDENTIFICATION OF THE HOLDING

Q10. What is the legal status of the Holder?

[Fill in one circle only]

1. Civil person/natural person
2. Group of civil persons/natural persons
3. Legal person

Q11. What is the legal status of the holding?

[Fill in one circle only]

1. (Country-specific response option)
2. (Country-specific response option)
3. (Country-specific response option)

If Q10 = 1 or 2 GO TO Q12, otherwise GO TO Q14

Q12. Answer the following questions about the Holder/Co-holders.

Q12a First name
Q12b Surname
Q12c Sex
   1. Male
   2. Female
Q12d PERSONAL ID of the Holder
Q13. Address of the Holder
   Q13a Region
   Q13b District
   Q13c Village or town name
   GO to Q15
Q14. What is the legal name of the holding?
Q15. Enumeration area of the holding
Q16. Holding Serial Number
Q17. Address of the holding
   1. Same as the address of the Holder → Go to Q18.
   2. Different from the address of the Holder
   Q17a Address (street)
   Q17b Village, town
   Q17c Region
   Q17d District
   Q17e
Q18. What is the main location type of the address reported above?

[Fill in one circle only]

1. Household dwelling (for HH sector) and farm, including dwelling and agricultural buildings
2. Main agricultural building
3. Main agricultural parcel
Q19. What are the GPS coordinates corresponding to the address of the holding?
   Q21a Latitude
   Q21b Longitude
Q20. What is the official identification number of the holding in the national business register?
Q21. What are the other administrative identification numbers of the holding?
   Q21a Livestock
   Q21b Wine production
   Q21c Organic production
   Q21d Other (specify)
Q22. What is the identification number of the holding from the last agricultural census? (Can be prefilled)
PART 1.3: AGRICULTURAL ACTIVITY

Q23. Does the holding record its agricultural activity or finances on registers or logbooks?

(Fill in one circle only)
- 1 No, never → Go to Q25.
- 2 Yes, only occasionally or partially → Go to Q25.
- 3 Yes, systematically

Q24. What information is systematically registered?

(Fill in all that apply)
- 1 Area cultivated/harvested
- 2 Crop production
- 3 Livestock production
- 4 Unit prices of crops sold and total sales by product
- 5 Input quantities used (seeds, fertilizers, plant protection products, etc.)
- 6 Detailed quantities and prices of inputs bought
- 7 Workers’ time
- 8 ‘Workers’ payment
- 9 Other (specify)

Q25. What is the tenure of the agricultural land used by the holding during the reference period?

(Fill in all that apply)
- 1 Owned with written documentation (includes a title deed, a will, a purchase agreement, etc.)
- 2 Owned without written documentation
- 3 Rented-in, leased or sharecropped with written agreement
- 4 Rented-in, leased or sharecropped without written agreement
- 5 State or communal land used with written agreement (certified use rights)
- 6 State or communal land used without written agreement (uncertified use rights)
- 7 Occupied/squatted without any permission
- 8 No agricultural land

Q26. From an economic perspective, what is the holding’s main agricultural focus for the reference period? *Answer based on the economic value of your activities, not the time spent on activities.

(Fill in one circle only)
- 1 Mainly crop production
- 2 Mainly livestock production → Go to Q28.
- 3 A mix of crop and livestock production → Go to Q29.

Q27. From an economic perspective, what is the main cropping activity? *The main cropping activity is the one with the highest economic value.

(Fill in one circle only)
- 1 Production of annual field crops (cereals, oilseeds, protein crops, root crops, tobacco, cotton, etc.) → Go to Q29.
- 2 Production of vegetables, mushrooms, flowers, ornamental plants, etc. → Go to Q29.
- 3 Production of grapes for wine → Go to Q29.
- 4 Production of fruits → Go to Q29.
- 5 Production of other perennial crops (cacao, coffee, etc.) → Go to Q29.
- 6 Mixed cropping (no real prevalence of a specific crop activity) → Go to Q29.

Q28. From an economic perspective, what is the main livestock activity? *The main livestock activity is the one with the highest economic value.

(Fill in one circle only)
- 1 Raising ruminant livestock for meat (cattle, sheep, goats, etc.)
- 2 Raising non-ruminant livestock for meat (pigs, poultry, etc.)
- 3 Production of eggs → Go to Q29.
- 4 Production of milk → Go to Q29.
- 5 Mixed livestock (no real prevalence of a specific livestock activity)

Q29. What is the main intended destination of your agricultural production?

(Fill in one circle only)
- 1 Producing primarily for sale (selling 90% or more)
- 2 Producing mainly for own consumption, with some sales (selling more than 10% and up to 50%)
- 3 Producing mainly for own consumption, with some sales (selling more than 50% and up to 90%)
- 4 Producing primarily for own consumption (selling 10% or less)

Comments on SECTION 1:
SECTION 2: CHARACTERISTICS OF THE HOLDERS AND MANAGERS

CASE 1: THE HOLDER IS A Civil/Natural Person (SECTION 1, PART 1.2, Q10=1)

Q01. Provide the following information on the Holder.

Q01a. First name

Q01b. Surname

Q01c. Contact number (preferably cell phone)

Q01d. Sex
- Male
- Female

Q01e. Age in completed years

Q01f. Nationality
- Local country
- Neighbouring country
- Other

Q01g. Indigenous group
- (Country-specific response option)
- (Country-specific response option)
- (Country-specific response option)
- None of the above

Q01h. Highest level of education completed
- None
- Less than primary
- Primary
- Lower secondary
- Upper secondary
- Tertiary/post-secondary

Q01i. Share of working time spent working on the holding
- Less than half ( < 40%)
- About half (40%-59%)
- Most/almost all (60%-99%)
- All (100%)

Q01j. Does the Holder have another gainful activity outside of the holding?
- No
- Yes

Q01k. Is the Holder also the Manager?
- No → Go to Q02.
- Yes → Go to SECTION 3.

Q02. Provide the following information on the Manager.

Q02a. First name

Q02b. Surname

Q02c. Contact number (preferably cell phone)

Q02d. Sex
- Male
- Female

Q02e. Age in completed years

Q02f. Link with the Holder
- Wife/husband or consensual union partner
- Other member of the household
- External

Q02g. Nationality
- Local country
- Neighbouring country
- Other

Q02h. Indigenous group
- (Country-specific response option)
- (Country-specific response option)
- (Country-specific response option)
- None of the above
Q02i Highest level of education completed
(Fill in one circle only)
1. None
2. Less than primary
3. Primary
4. Lower secondary
5. Upper secondary
6. Tertiary/post-secondary

Q02j Share of working time spent working on the holding
(Fill in one circle only)
1. Less than half (< 40%)
2. About half (40%-59%)
3. Most/almost all (60%-99%)
4. All (100%)

Q02k Does the Manager have another gainful activity outside of the holding?
0. No
1. Yes
CASE 2: THE HOLDER IS A GROUP OF CIVIL/NATURAL PERSONS (SECTION 1, PART 1.2, Q10=2)

Q03. What is the number of civil/natural persons who are members of the Holder group?  
(REPEAT Q04. FOR ALL CO-HOLDERS (number reported in Q03)).

Q04. Provide the following information for Co-Holder 1.

Q04a. First name
Q04b. Surname
Q04c. Contact number (preferably cell phone)
Q04d. Sex
   ☐ 1 Male
   ☐ 2 Female
Q04e. Age in completed years
Q04f. Nationality
   ☐ 1 Local country
   ☐ 2 Neighbouring country
   ☐ 3 Other
Q04g. Indigenous group
   ☐ 1 (Country-specific response option)
   ☐ 2 (Country-specific response option)
   ☐ 3 (Country-specific response option)
   ☐ 4 None of the above
Q04h. Highest level of education completed
   ☐ 1 None
   ☐ 2 Less than primary
   ☐ 3 Primary
   ☐ 4 Lower secondary
   ☐ 5 Upper secondary
   ☐ 6 Tertiary/post-secondary
Q04i. Share of working time spent working on the holding
   ☐ 1 Less than half (< 40%)  
   ☐ 2 About half (40%-59%)  
   ☐ 3 Most/almost all (60%-99%)  
   ☐ 4 All (100%)
Q04j. Does the Co-Holder 1 have another gainful activity outside of the holding?
   ☐ 0 No  
   ☐ 1 Yes
Q04k. Is the Co-Holder 1 also the Manager?
   ☐ 0 No  
   ☐ 1 Yes

Q05. If there is no Manager among the Co-Holders, provide the following information on the Manager.

Q05a. First name
Q05b. Surname
Q05c. Contact number (preferably cell phone)
Q05d. Sex
   ☐ 1 Male
   ☐ 2 Female
Q05e. Age in completed years
Q05f. Link with one of the Holders
   ☐ 1 Wife/husband or consensual union partner  
   ☐ 2 Other member of the household  
   ☐ 3 External
Q05g. Nationality
   ☐ 1 Local country  
   ☐ 2 Neighbouring country  
   ☐ 3 Other
Q05h. Indigenous group
AGRIS CORE MODULE
QUESTIONNAIRE

Q05a Highest level of education completed
(Fill in one circle only)
1 None
2 Less than primary
3 Primary
4 Lower secondary
5 Upper secondary
6 Tertiary/post-secondary

Q05b Share of working time spent working on the holding
(Fill in one circle only)
1 Less than half ( < 40%)
2 About half (40%-59%)
3 Most/almost all (60%-99%)
4 All (100%)

Q05d Does the Manager have another gainful activity outside of the holding?
0 No
1 Yes
## CASE 3: THE HOLDER IS A LEGAL PERSON (SECTION 1, PART 1.2, Q10=3)

**Q06.** What is the number of civil/natural persons participating in the capital of the company?

**Q07.** What is the number of legal persons participating in the capital of the company?

**Q08.** How many Managers are associated with the holding?

*Repeat Q09, for each Manager (number reported in Q08).*

**Q09.** Provide the following information for each Manager.

- **Q09a.** First name
- **Q09b.** Surname
- **Q09c.** Contact number (preferably cell phone)
- **Q09d.** Sex
  - 1 Male
  - 2 Female
- **Q09e.** Age in completed years
- **Q09f.** Nationality
  - 1 Local country
  - 2 Neighbouring country
  - 3 Other
- **Q09g.** Indigenous group
  - 1 (Country-specific response option)
  - 2 (Country-specific response option)
  - 3 (Country-specific response option)
  - 4 None of the above
- **Q09h.** Highest level of education completed
  - 1 None
  - 2 Less than primary
  - 3 Primary
  - 4 Lower secondary
  - 5 Upper secondary
  - 6 Tertiary/post-secondary
- **Q09i.** Share of working time spent working on the holding
  - 1 Less than half (< 40%)
  - 2 About half (40%-59%)
  - 3 Most/almost all (60%-99%)
  - 4 All (100%)
- **Q09j.** Does the Manager have another gainful activity outside of the holding?
  - 0 No
  - 1 Yes

*Comments on SECTION 2:*
**AGRIS CORE MODULE**

**QUESTIONNAIRE**

**SECTION 3: CROP PRODUCTION DURING THE REFERENCE PERIOD DD/MM/YYYY to DD/MM/YYYY**

**PART 3.1: CROP PRODUCTION AND DESTINATIONS**

**Q00. Did the holding grow crops during the reference period, whatever the production or destination?**
- **0 No** → Go to Q00a.
- **1 Yes** → Go to Q01.

**Q00a. What was the area of the holding used for other purposes than crop production?**

<table>
<thead>
<tr>
<th>Area</th>
<th>Unit of measure</th>
<th>Conversion factor to a standard unit</th>
<th>Area calculated in standard unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen gardens and backyards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm buildings and farmyards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest and other wooded land</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquaculture on the holding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other land (cultivated, rocks, wetlands, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Q00b. Do you plan to introduce crops in the upcoming period?**
- **0 No** → Go to section 4.
- **1 Yes** → Go to Q17a, Q17b and Q17c.

**Q01. Would you be confident in providing an estimate of the area of your holding?**
- **0 No** → Please give the best estimations you can to the following questions.
- **1 Yes**

**Q02. How many parcels did you use for agricultural production (for crops and livestock) during the reference period?**

**Q03. What crops were produced on the holding during the reference period?**

* Report all crops grown, regardless of the quantity harvested (even zero).
* Report associated crops grown on the same parcel.
* See crop list.

<table>
<thead>
<tr>
<th>Crop name</th>
<th>Crop code</th>
</tr>
</thead>
<tbody>
<tr>
<td>[CROP 1]</td>
<td></td>
</tr>
<tr>
<td>[CROP 2]</td>
<td></td>
</tr>
<tr>
<td>[CROP 3]</td>
<td></td>
</tr>
<tr>
<td>[CROP 4]</td>
<td></td>
</tr>
<tr>
<td>[CROP 5]</td>
<td></td>
</tr>
<tr>
<td>[CROP 6]</td>
<td></td>
</tr>
<tr>
<td>[CROP 7]</td>
<td></td>
</tr>
</tbody>
</table>

**Q04. Answer the following questions about [CROP].**

**Q04a. Were fertilizers used on [CROP]?**
- **0 No**
- **1 Yes**

**Q04b. Were plant protection products used on [CROP]?**
- **0 No**
- **1 Yes**

**Q04c. Did the holding have a stock of [CROP] stored just before the last harvest?**
- **0 No** → Go to Q04f.
- **1 Yes**

**Q04d. How much [CROP] was stored on the holding?**

**Q04e. How much [CROP] was stored at a location off of the holding?**

**Q04f. How many harvests of [CROP] were there in the reference period?**

* Fill in one circle only

<table>
<thead>
<tr>
<th>1 Continuous harvest</th>
<th>2 One harvest</th>
<th>3 Two harvests</th>
<th>4 Three harvests</th>
<th>5 Four harvests</th>
<th>6 No harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go to Q05.</td>
<td>Go to Q06.</td>
<td>Go to Q06.</td>
<td>Go to Q06.</td>
<td>Go to Q06.</td>
<td>Go to NEXT CROP.</td>
</tr>
</tbody>
</table>

**Q05. Answer the following questions on continuous harvest [CROP].**

* The reference period for questions on continuous harvest crops is the last six months.

**Q05a. What area of [CROP] was planted in the last six months?**

**Q05b. Was [CROP] irrigated during the last six months?**
- **0 No**
- **1 Yes**

**Q05c. What was the quantity of [CROP] harvested in the last six months?**

**Q05d. What was the quantity of [CROP] harvested in the last six months?**

**Q05e. What was the quantity of [CROP] harvested in the last six months?**

**Q05f. What was the quantity of [CROP] harvested in the last six months?**

**Q05g. What was the quantity of [CROP] harvested in the last six months?**

**Q05h. What was the quantity of [CROP] harvested in the last six months?**
**AGRIS CORE MODULE**  
**QUESTIONNAIRE**

**Q05d** How was the production of [CROP] compared to the previous six months?
- [ ] 1 Similar
- [ ] 2 Greater
- [ ] 3 Lower

**Q05e** Was [CROP] cultivated together with other crops (at the same time in the same parcel)?
- [ ] 0 No
- [ ] 1 Yes, for all of the crop
- [ ] 2 Yes, for a part of the crop

**Q06.** Answer the following questions about the most recent harvest (Harvest 1) of [CROP].
- Include crops harvested at least once during the reference period.
- Exclude continuous harvest crops.

**Q06a** When did the last harvest start for [CROP]?

**Q06b** How many days did the harvest of [CROP] last?

**Q06c** Was [CROP] irrigated during this harvest season?
- [ ] 0 No
- [ ] 1 Yes

**Q06d** What area of [CROP] was planted?

**Q06e** What area of [CROP] was harvested?

**Q06f** What was the quantity of [CROP] harvested?

**Q06g** How was the yield of [CROP] compared to the same harvest of the previous year?
- [ ] 1 Similar
- [ ] 2 Greater
- [ ] 3 Lower

**Q06h** Was [CROP] cultivated together with other crops (at the same time in the same parcel)?
- [ ] 0 No
- [ ] 1 Yes, for all of the crop
- [ ] 2 Yes, for a part of the crop

**Q07.** Answer the following questions about the harvest before the most recent harvest (penultimate) (Harvest 2) of [CROP].
- Include crops harvested at least twice during the reference period.
- Exclude continuous harvest crops.

**Q07a** When did the penultimate harvest (Harvest 2) start for [CROP]?

**Q07b** Was [CROP] irrigated during this harvest season?
- [ ] 0 No
- [ ] 1 Yes

**Q07c** What area of [CROP] was planted?

**Q07d** What area of [CROP] was harvested?

**Q07e** What was the quantity of [CROP] harvested?

**Q07f** Was [CROP] cultivated together with other crops (at the same time in the same parcel)?
- [ ] 0 No
- [ ] 1 Yes, for all of the crop
- [ ] 2 Yes, for a part of the crop

**Q08.** Answer the following questions about the antepenultimate harvest (Harvest 3) of [CROP].
- Include crops harvested at least three times during the reference period.
- Exclude continuous harvest crops.

**Q08a** When did the antepenultimate harvest (Harvest 3) start for [CROP]?
Q08b. Was [CROP] irrigated during this harvest season?
- 0 No
- 1 Yes

Q08c. What area of [CROP] was planted?

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit of measure</th>
<th>Conversion factor</th>
<th>Quantity calculated</th>
</tr>
</thead>
</table>

Q08d. What area of [CROP] was harvested?

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit of measure</th>
<th>Conversion factor</th>
<th>Quantity calculated</th>
</tr>
</thead>
</table>

Q08e. What was the quantity of [CROP] harvested?

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit of measure</th>
<th>Conversion factor</th>
<th>Quantity calculated</th>
</tr>
</thead>
</table>

Q08f. Was [CROP] cultivated together with other crops (at the same time in the same parcel)?
- 0 No
- 1 Yes, for all of the crop
- 2 Yes, for a part of the crop

FOR CROPS THAT HAD THREE HARVESTS IN THE LAST REFERENCE PERIOD (Q04f=4) → Go to Q10.
FOR CROPS THAT HAD FOUR HARVESTS IN THE LAST REFERENCE PERIOD (Q04f=5) → Go to Q09.

Q09. Answer the following questions about the oldest harvest (Harvest 4) of [CROP] during the reference period.
* Include crops harvested at least four times during the reference period.
* Exclude continuous harvest crops.

Q09a. When did the oldest harvest (Harvest 4) start for [CROP]?

Y Y Y Y / M M / D D

Q09b. Was [CROP] irrigated during this harvest season?
- 0 No
- 1 Yes

Q09c. What area of [CROP] was planted?

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit of measure</th>
<th>Conversion factor</th>
<th>Quantity calculated</th>
</tr>
</thead>
</table>

Q09d. What area of [CROP] was harvested?

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit of measure</th>
<th>Conversion factor</th>
<th>Quantity calculated</th>
</tr>
</thead>
</table>

Q09e. What was the quantity of [CROP] harvested?

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit of measure</th>
<th>Conversion factor</th>
<th>Quantity calculated</th>
</tr>
</thead>
</table>

Q09f. Was [CROP] cultivated together with other crops (at the same time in the same parcel)?
- 0 No
- 1 Yes, for all of the crop
- 2 Yes, for a part of the crop

Q10. Answer the following questions about the destinations of the holding’s production from all harvests during the reference period.
* Use the same unit of measure that was reported for quantities in previous questions.
* Include farm use for seeds or animal feed.

Q10a. What was the quantity of [CROP] for own use?

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit price of the last sale</th>
<th>Unit used to describe the price</th>
</tr>
</thead>
</table>

Q10b. What was the quantity of [CROP] sold?

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit price of the last sale</th>
<th>Unit used to describe the price</th>
</tr>
</thead>
</table>

Q10c. What was the quantity of [CROP] used as pay for labour as wages?

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit price of the last sale</th>
<th>Unit used to describe the price</th>
</tr>
</thead>
</table>

Q10d. What was the quantity of [CROP] given to service or input providers for pay (land, seeds, plant protection products, fertilizers, etc.)?

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit price of the last sale</th>
<th>Unit used to describe the price</th>
</tr>
</thead>
</table>
**PART 3.2: AREA UTILIZED**

Q11. What was the area used for the following agricultural purposes?

* Refer to the last harvest for Q11a to Q11e.

<table>
<thead>
<tr>
<th>Agricultural area utilized</th>
<th>Area</th>
<th>Unit of measure</th>
<th>Conversion factor to a standard unit</th>
<th>Area calculated in standard unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q11a Temporary crops under greenhouses or high shelters</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
</tr>
<tr>
<td>Q11b Temporary crops outdoors or under low shelters</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
</tr>
<tr>
<td>Q11c Temporary fallow</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
</tr>
<tr>
<td>Q11d Temporary meadows and pastures</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
</tr>
<tr>
<td>Q11e Kitchen gardens and backyards</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
</tr>
<tr>
<td>Q11f Permanent crops under greenhouses or high shelters</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
</tr>
<tr>
<td>Q11g Permanent crops outdoors or under low shelters</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
</tr>
<tr>
<td>Q11h Permanent meadows and pastures</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
<td>[\text{\ldots}]</td>
</tr>
</tbody>
</table>

**Total agricultural area utilized (AAU) (calculated)**

Q11i Do you confirm that the calculated area corresponds to the holding’s total agricultural area utilized?

- No
- Yes

Q11j Area equipped for irrigation in working order

Q11k Area equipped with soil drainage in working order

Q11l Area in organic farming (part of the AAU calculated above)

Q13. Was there land used for the following purposes?

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q13a Farm buildings and farmyards</td>
<td>[\text{\ldots}]</td>
</tr>
<tr>
<td>Q13b Forest and other wooded land</td>
<td>[\text{\ldots}]</td>
</tr>
<tr>
<td>Q13c Aquaculture on the holding (area not included in Q11)</td>
<td>[\text{\ldots}]</td>
</tr>
<tr>
<td>Q13d Other land (unutilized, rocks, wetlands, etc.)</td>
<td>[\text{\ldots}]</td>
</tr>
</tbody>
</table>
### PART 3.3: CROP PRODUCTION MODES

Q14. Answer the following questions about the type of seeds used for [CROP].
* Include all temporary crops.
* Exclude perennial crops and permanent pastures.

#### Q14a
How many varieties of [CROP] were used?

<table>
<thead>
<tr>
<th>Fill in one circle only</th>
<th>(Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 One variety</td>
<td></td>
</tr>
<tr>
<td>2 More than one variety</td>
<td></td>
</tr>
</tbody>
</table>

#### Q14b
What share of the [CROP] seed consisted in certified modern varieties? [ ] %

#### Q14c
What share of the [CROP] seed consisted in uncertified varieties? [ ] %

#### Q14d
If certified varieties of [CROP] were used, were any of them Genetically Modified Organisms (GMO)?

<table>
<thead>
<tr>
<th>0 No</th>
<th>1 Yes</th>
</tr>
</thead>
</table>

**THE ANSWER TO THIS QUESTION WILL DETERMINE IF Q15a ETC. WILL BE ASKED FOR CROP1 AND SUBSEQUENT CROPS.**

Q15. Does the holding have any production and/or marketing contracts for any crops?

<table>
<thead>
<tr>
<th>0 No</th>
<th>1 Yes</th>
</tr>
</thead>
</table>

For each of crops identified in Q15, answer the following questions:

#### Q15a
Does the holding have a production contract for [CROP]?

<table>
<thead>
<tr>
<th>0 No</th>
<th>1 Yes</th>
</tr>
</thead>
</table>

#### Q15b
Does the production contract cover 100% of the [CROP] grown by the holding (exclusive contract)?

<table>
<thead>
<tr>
<th>0 No</th>
<th>1 Yes</th>
</tr>
</thead>
</table>

#### Q15c
Does the holding have a marketing contract for [CROP]?

<table>
<thead>
<tr>
<th>0 No</th>
<th>1 Yes</th>
</tr>
</thead>
</table>

#### Q15d
Does the marketing contract cover 100% of the [CROP] grown by the holding (exclusive contract)?

| 0 No | 1 Yes |
PART 3.4: INTENTIONS FOR CROP PRODUCTION FOR THE 12 MONTHS AFTER THE REFERENCE PERIOD

Q16. For each of the crops identified in Q06 answer the following questions about planting intentions for [CROP].

Q16a. What area do you plan to dedicate to [CROP] in the upcoming period?

(Fill in one circle only)

1. Similar  → Go to Q17.
2. Greater
3. Lower
4. None

16b. What is the main reason for changes in the intended area of [CROP]?

(Fill in one circle only)

1. Crop rotation
2. Technical
3. Economic
4. Other (specify)

Q17. Do you plan to introduce OTHER crops in the upcoming period (crops not identified in Q06)?

0. No  → Go to SECTION 4.
1. Yes

Q17a. What other crops do you plan to introduce in the upcoming period?

<table>
<thead>
<tr>
<th>Crop name</th>
<th>Crop code</th>
</tr>
</thead>
<tbody>
<tr>
<td>[CROP 1]</td>
<td></td>
</tr>
<tr>
<td>[CROP 2]</td>
<td></td>
</tr>
<tr>
<td>[CROP 3]</td>
<td></td>
</tr>
<tr>
<td>[CROP 4]</td>
<td></td>
</tr>
</tbody>
</table>

Q17b. What area of [CROP] do you plan to cultivate?

Area Unit of measure (use codes) Conversion factor to a standard unit Area calculated in standard unit

Q17c. What is the main reason for the planned introduction of [CROP]?

(Fill in one circle only)

1. Crop rotation
2. Technical
3. Economic
4. Other (specify)

THE SERIES OF CROP-RELATED QUESTIONS WILL BE ASKED FOR EACH OF THE CROPS IDENTIFIED IN Q06. ONCE COMPLETE FOR ALL CROPS, PROCEED TO SECTION 4.
### SECTION 4: LIVESTOCK PRODUCTION DURING THE REFERENCE PERIOD DD/MM/YYYY to DD/MM/YYYY

#### PART 4.1: RAISING ACTIVITIES AND PRODUCTION

**TEXT TO READ:**
This section of the questionnaire is about livestock and poultry on the holding. Report for all animals on the holding, regardless of ownership, including those that are boarded (animals in pension), owned by another member of the household, custom-fed or fed under contract.

<table>
<thead>
<tr>
<th>Q01. Do you register the main events about the livestock you raise (births, sales, production, etc.)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 No ➔ Please give the best estimations you can to the following questions.</td>
</tr>
<tr>
<td>1 Yes</td>
</tr>
</tbody>
</table>

#### PART 4.1.1: EQUINE LIVESTOCK

<table>
<thead>
<tr>
<th>Q02a. What equines were raised on the holding during the reference period?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Fill in all that apply] RESPONSE = [EQUINE]</td>
</tr>
<tr>
<td>1 Saddle or racing mares</td>
</tr>
<tr>
<td>2 Other mares</td>
</tr>
<tr>
<td>3 Saddle or racing horses (excluding mares)</td>
</tr>
<tr>
<td>4 Other horses (excluding mares)</td>
</tr>
<tr>
<td>5 Mules or hinnies</td>
</tr>
<tr>
<td>6 Asses</td>
</tr>
<tr>
<td>7 Other equines (specify)</td>
</tr>
</tbody>
</table>

*Use the same unit of measure that was reported for quantities in previous questions.

<table>
<thead>
<tr>
<th>Q05a. Were any [EQUINE] slaughtered for meat on the holding during the reference period (12 months)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 No ➔ Go to Q05d.</td>
</tr>
<tr>
<td>1 Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q05b. Answer the following about [EQUINE] slaughtered on the holding.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q05c. Is the carcass weight reported above measured or estimated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Measured</td>
</tr>
<tr>
<td>2 Estimated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q05d. Were any [EQUINE] slaughtered for meat in a slaughterhouse for the holding during the reference period (12 months)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 No ➔ Go to Q06.</td>
</tr>
<tr>
<td>1 Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q05e. Answer the following about [EQUINE] slaughtered in a slaughterhouse.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q05f. Is the carcass weight reported above measured or estimated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Measured</td>
</tr>
<tr>
<td>2 Estimated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q06a. What was the quantity of [EQUINE] meat for own-use?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q06b. What was the quantity of [EQUINE] meat sold?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q06c. What was the quantity of [EQUINE] meat given to service or input providers (in payment for feed, veterinary products, etc.)?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q06d. What was the quantity of [EQUINE] meat used as pay for labour or wages?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q06e. What was the quantity of [EQUINE] meat used as pay for labour or wages?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q06f. What was the quantity of [EQUINE] meat for own-use?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Q07. What is the number of [EQUINE] used for traction or draught purposes?</th>
</tr>
</thead>
</table>

**THE FOLLOWING QUESTIONS (Q03 to Q07) WILL BE ASKED FOR EACH OF THE EQUINE TYPES IDENTIFIED IN Q02a.**
**AGRIS CORE MODULE**

**QUESTIONNAIRE**

**PART 4.1.2: BOVINE CATTLE**

Q08. Were bovine cattle raised on the holding during the reference period (12 months)?

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Q08a. What cattle were raised on the holding during the reference period?

(If all that apply)  

<table>
<thead>
<tr>
<th></th>
<th>Dairy cows</th>
<th>Other cows</th>
<th>Cattle less than one year old</th>
<th>Other cattle (bulls, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**THE FOLLOWING QUESTIONS (Q09 to Q13) WILL BE ASKED FOR EACH OF THE CATTLE TYPES IDENTIFIED IN Q08a.**

Q09. Answer the following questions about [CATTLE].

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Number of animals</th>
<th>Total carcass weight</th>
<th>Total carcass weight</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q10. Answer the following questions about the changes in [CATTLE] numbers during the reference period (12 months).

<table>
<thead>
<tr>
<th>Number of births</th>
<th>Number of animals</th>
<th>Total carcass weight</th>
<th>Total carcass weight</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q11. Answer the following questions about the production of meat from [CATTLE] during the reference period (12 months).

Q11a. Were any [CATTLE] slaughtered for meat on the holding during the reference period (12 months)?

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Q11b. Answer the following about [CATTLE] slaughtered on the holding.

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Total carcass weight</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q11c. Is the carcass weight reported above measured or estimated?

<table>
<thead>
<tr>
<th></th>
<th>Measured</th>
<th>Estimated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Q11d. Were any [CATTLE] slaughtered for meat in a slaughterhouse for the holding during the reference period (12 months)?

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Q11e. Answer the following about [CATTLE] slaughtered in a slaughterhouse.

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Total carcass weight</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q11f. Is the carcass weight reported above measured or estimated?

<table>
<thead>
<tr>
<th></th>
<th>Measured</th>
<th>Estimated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Q12. Answer the following questions about the destinations of the holding's production of [CATTLE] meat during the reference period - slaughtered on the holding or in a slaughterhouse.

* Use the same unit of measure that was reported for quantities in previous questions.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q13. Are any cows in lactation now?

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Q13a. How many cows are in lactation?

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

Q14. When did the lactation period start?

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

Q15. What is the average period of time during the year in which you can get milk from a lactating female? (Include all lactation periods)

Q15a. What is the time unit?

(If in one circle only)  

<table>
<thead>
<tr>
<th></th>
<th>Day</th>
<th>Week</th>
<th>Month</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Q15b. What is the number of time units per year for which you can get milk from a lactating female?

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

Q16. Do you allow calves to suckle directly from a cow?

(If all that apply)  

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes, with the mother or with a suckler cow</th>
</tr>
</thead>
</table>
Q17. For milk production, what is the period for which you prefer to answer questions?

* The period selected will be used to answer a number of questions on milk production.

(Fill in one circle only)

1. Daily average on a typical day
2. Yesterday (if the cows are in lactation)
3. Last week (if the cows are in lactation)
4. The reference period (12 months)

Q18. What was the production of raw milk in the period selected above?

Q19. Report the share of milk used in the following ways:

Percent

Q19a. Own use for human consumption
Q19b. Processed on the holding into milk products
Q19c. Given to young animals
Q19d. Sold as raw milk
Q19e. Other (specify)

Total

100%

Unit price of the last sale

Number of animals

Q20. What is the number of [CATTLE] used for traction or draught purposes?
**AGRIS CORE MODULE QUESTIONNAIRE**

**PART 4.1.3: BUFFALOES**

Q21. Were buffaloes raised on the holding during the reference period (12 months)?
   - 0 No → Go to Q24.
   - 1 Yes

Q21a. What buffaloes were raised on the holding during the reference period?
   ![Options]
   - 1 Dairy females
   - 2 Other females
   - 3 Buffalo less than one year old
   - 4 Other buffaloes (bulls, etc.)

  **THE FOLLOWING QUESTIONS (Q22 to Q26) WILL BE ASKED FOR EACH OF THE BUFFALO TYPES IDENTIFIED IN Q21a.**

Q22. Answer the following questions about **BUFFALO**.

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Unit price of the last sale</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q23. Answer the following questions about the changes in **BUFFALO** numbers during the reference period (12 months).

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Unit price of the last sale</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q24. Answer the following questions about the production of meat from **BUFFALO** during the reference period (12 months).

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Total carcass weight obtained</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q24a. Were any **BUFFALO** slaughtered for meat on the holding during the reference period (12 months)?
   - 0 No → Go to Q24d.
   - 1 Yes

Q24b. Answer the following about **BUFFALO** slaughtered on the holding.

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Total carcass weight obtained</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q24c. Is the carcass weight reported above measured or estimated?
   - 1 Measured
   - 2 Estimated

Q24d. Were any **BUFFALO** slaughtered in a slaughterhouse for the holding during the reference period (12 months)?
   - 0 No → Go to Q25.
   - 1 Yes

Q24e. Answer the following about **BUFFALO** slaughtered in a slaughterhouse.

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Total carcass weight obtained</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q24f. Is the carcass weight reported above measured or estimated?
   - 1 Measured
   - 2 Estimated

Q25. Answer the following questions about the destinations of the holding’s production of **BUFFALO** meat during the reference period - slaughtered on the holding or in a slaughterhouse. *Use the same unit of measure that was reported for quantities in previous questions.*

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit price of sale</th>
<th>Unit used to describe the price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FOR THOSE THAT REPORTED FEMALES Q21a=1, 2, ASK Q26.

Q26. Are buffalo females in lactation now?
   - 0 No → Go to Q28.
   - 1 Yes

Q26a. How many buffalo females are in lactation?

<table>
<thead>
<tr>
<th>Y Y Y Y / M M / D D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

Q27. When did the lactation period start?

<table>
<thead>
<tr>
<th>T Y Y Y / M M / D D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

Q28. What is the average period of time during the year in which you can get milk from a lactating female? (Include all lactation periods)

<table>
<thead>
<tr>
<th>Time unit</th>
<th>Number of time units per year for which you can get milk from a lactating female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q28a. What is the time unit?
   - 1 Day
   - 2 Week
   - 3 Month

Q28b. What is the number of time units per year for which you can get milk from a lactating female?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q29. Do you allow young buffaloes to suckle directly from a female?
   ![Options]
   - 0 No
   - 1 Yes, with the mother or with a suckler buffalo female
Q30. For milk production, what is the period for which you prefer to answer questions?

* The period selected will be used to answer a number of questions on milk production.

1. Daily average on a typical day
2. Yesterday (if lactation is ongoing)
3. Last week (if lactation is ongoing)
4. The reference period (12 months)

Q31. What was the production of raw milk in the period selected above?

<table>
<thead>
<tr>
<th>Quantity of raw milk</th>
<th>Unit of measure</th>
</tr>
</thead>
</table>

Q32. Report the share of milk used in the following ways:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Percent</th>
<th>Percent</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q32a Own use for human consumption</td>
<td>Q32b Processed on the holding into milk products</td>
<td>Q32c Given to young animals</td>
<td>Q32d Sold as raw milk</td>
</tr>
<tr>
<td>Total</td>
<td>Total</td>
<td>Total</td>
<td>Total</td>
</tr>
</tbody>
</table>

Q32e If the share of raw milk sold (Q32d) is greater than 0%, answer the following about the milk sold.

<table>
<thead>
<tr>
<th>Unit price of the last sale</th>
<th>Unit of measure</th>
</tr>
</thead>
</table>

Q33. What is the number of [BUFFALO] used for traction or draught purposes?

<table>
<thead>
<tr>
<th>Number of animals</th>
</tr>
</thead>
</table>
Q34. Were camels or camelids raised on the holding during the reference period (12 months)?
   0 No → Go to Q37.
   1 Yes

Q34a. What camels were raised on the holding during the reference period?
   [If all that apply] RESPONSE = [CAMELID]
   1 Camels
   2 Llamas or vicuñas
   3 Other camels and camelids (specify)

THE FOLLOWING QUESTIONS (Q35 to Q46) WILL BE ASKED FOR EACH OF THE CAMELID TYPES IDENTIFIED IN Q34a.

Q35. Answer the following questions about [CAMELID].

<table>
<thead>
<tr>
<th>Number of animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of births</td>
</tr>
<tr>
<td>Number of live animals bought or received (including exchanged)</td>
</tr>
<tr>
<td>Number of animal deaths (from natural causes, illness, etc.)</td>
</tr>
<tr>
<td>Number of live animals sold, used as pay or wages for labour, given to landlord as rent, given for other reasons, exchanged</td>
</tr>
</tbody>
</table>

Q36. Answer the following questions about the changes in [CAMELID] numbers during the reference period (12 months).

<table>
<thead>
<tr>
<th>Number of animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of births</td>
</tr>
<tr>
<td>Number of live animals bought or received (including exchanged)</td>
</tr>
<tr>
<td>Number of animal deaths (from natural causes, illness, etc.)</td>
</tr>
<tr>
<td>Number of live animals sold, used as pay or wages for labour, given to landlord as rent, given for other reasons, exchanged</td>
</tr>
</tbody>
</table>

Q37. Answer the following questions about the production of meat from [CAMELID] during the reference period (12 months).

<table>
<thead>
<tr>
<th>Number of animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of animals slaughtered</td>
</tr>
<tr>
<td>Total carcass weight obtained</td>
</tr>
</tbody>
</table>

Q37a. Were any [CAMELID] slaughtered for meat on the holding during the reference period (12 months)?
   0 No → Go to Q36.
   1 Yes

Q37b. Answer the following about [CAMELID] slaughtered on the holding.

<table>
<thead>
<tr>
<th>Number of animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total carcass weight obtained</td>
</tr>
</tbody>
</table>

Q37c. Is the carcass weight reported above measured or estimated?
   1 Measured
   2 Estimated

Q37d. Were any [CAMELID] slaughtered for meat in a slaughterhouse for the holding during the reference period (12 months)?
   0 No → Go to Q37.
   1 Yes

Q37e. Answer the following about [CAMELID] slaughtered in a slaughterhouse.

<table>
<thead>
<tr>
<th>Number of animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total carcass weight obtained</td>
</tr>
</tbody>
</table>

Q37f. Is the carcass weight reported above measured or estimated?
   1 Measured
   2 Estimated

Q38. Answer the following questions about the destinations of the holding’s production of [CAMELID] meat during the reference period - slaughtered on the holding or in a slaughterhouse.

* Use the same unit of measure that was reported for quantities in previous questions.

<table>
<thead>
<tr>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of animals slaughtered</td>
</tr>
<tr>
<td>Total carcass weight obtained</td>
</tr>
</tbody>
</table>

Q38a. What was the quantity of [CAMELID] meat for own-use?

Q38b. What was the quantity of [CAMELID] meat sold?

Q38c. What was the quantity of [CAMELID] meat used as pay for labour as wages?

Q38d. What was the quantity of [CAMELID] meat given to service or input providers (in payment for feed, veterinary products, etc.)?

Q39. Are any [CAMELID] females in lactation now?
   0 No → Go to Q40.
   1 Yes

Q39a. How many [CAMELID] females are in lactation?

Q40. When did the lactation period start?

Q41. What is the average period of time during the year in which you can get milk from a lactating female? (Include all lactation periods)

<table>
<thead>
<tr>
<th>Time unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of time units per year for which you can get milk from a lactating female</td>
</tr>
</tbody>
</table>

Q41a. What is the time unit?
   [If in one circle only]
   1 Day
   2 Week
   3 Month

Q41b. What is the number of time units per year for which you can get milk from a lactating female?

Q42. Do you allow young [CAMELID] to suckle directly from a female?
   0 No → Go to Q43.
   1 Yes, with the mother or with a suckler [CAMELID] female
Q43. For milk production, what is the period for which you prefer to answer questions?  
* The period selected will be used to answer a number of questions on milk production.  
(Fill in one circle only)  
☐ 1 Daily average on a typical day  
☐ 2 Yesterday (if lactation is ongoing)  
☐ 3 Last week (if if lactation is ongoing)  
☐ 4 The reference period (12 months)  

Q44. What was the production of raw milk in the period selected above?  

Quantity of raw milk  

Unit of measure  

Q45. Report the share of milk used in the following ways.  

Percent  

Q45a Own use for human consumption  
Q45b Processed on the holding into milk products  
Q45c Given to young animals  
Q45d Sold as raw milk  
Q45e Other (specify)  
Total  

Q45f If the share of raw milk sold (Q45d) is greater than 0%, answer the following about the milk sold.  

Unit price of the last sale  

Unit of measure  

Number of animals  

Q46. What is the number of [CAMELID] used for traction or draught purposes?  

Number of animals
PART 4.1.5: SHEEP

PLEASE NOTE THAT FOR THIS PART THE REFERENCE PERIOD IS 6 MONTHS

Q47. Were sheep raised on the holding during the reference period (6 months)?
   ⚡ 0 No → Go to Q59.
   ⚡ 1 Yes

Q47a. What sheep were raised on the holding during the reference period?
   (If all in that apply)
   ⚡ 1 Dairy females
   ⚡ 2 Other females
   ⚡ 3 Sheep less than one year old
   ⚡ 4 Other sheep (rams, etc.)

THE FOLLOWING QUESTIONS (Q48 to Q51) WILL BE ASKED FOR EACH OF THE SHEEP TYPES IDENTIFIED IN Q47a.

Q48. Answer the following questions about SHEEP.
   Q48a. Number of SHEEP as of today.
   Q48b. Number of SHEEP bought or received (including exchanged).
   Q48c. Number of animal deaths (from natural causes, illness, etc.).
   Q48d. Number of live animals sold, used as pay or wages for labour, given to landlord as rent, given for other reasons, exchanged.

Q49. Answer the following questions about the changes in SHEEP numbers during the reference period (6 months).
   Q49a. Number of births (for Q47a = 3).
   Q49b. Number of live animals bought or received (including exchanged). Unit price of the last sale.
   Q49c. Number of animal deaths (from natural causes, illness, etc.).
   Q49d. Number of live animals sold, used as pay or wages for labour, given to landlord as rent, given for other reasons, exchanged.

Q50. Answer the following questions about the production of meat from SHEEP during the reference period (6 months).
   Q50a. Were there any SHEEP slaughtered for meat on the holding during the reference period (6 months)?
   ⚡ 0 No → Go to Q50d.
   ⚡ 1 Yes
   Number of animals Total carcass weight obtained

Q50b. Answer the following about SHEEP slaughtered on the holding.
   Q50c. Is the carcass weight reported above measured or estimated?
   ⚡ 1 Measured
   ⚡ 2 Estimated

Q50d. Were there any SHEEP slaughtered for meat in a slaughterhouse for the holding during the reference period (6 months)?
   ⚡ 0 No → Go to Q50g.
   ⚡ 1 Yes
   Number of animals Total carcass weight obtained

Q50e. Answer the following about SHEEP slaughtered in a slaughterhouse.
   Q50f. Is the carcass weight reported above measured or estimated?
   ⚡ 1 Measured
   ⚡ 2 Estimated

Q50g. How is the production compared to the first 6 months of the reference period?
   (Fill in one circle only)
   ⚡ 1 Similar
   ⚡ 2 Greater
   ⚡ 3 Lower

Q51. Answer the following questions about the destinations of the holding’s production of SHEEP meat during the reference period - slaughtered on the holding or in a slaughterhouse.
   * Use the same unit of measure that was reported for quantities in previous questions.

Q51a. What was the quantity of SHEEP meat for own-use?
   Quantity Unit price of sale Unit used to describe the price

Q51b. What was the quantity of SHEEP meat sold?
   Quantity Unit price of sale Unit used to describe the price

Q51c. What was the quantity of SHEEP meat used as pay for labour or wages?
   Quantity Unit price of sale Unit used to describe the price

Q51d. What was the quantity of SHEEP meat given to service or input providers (in payment for feed, veterinary products, etc.)?
   Quantity Unit price of sale Unit used to describe the price

FOR THOSE THAT REPORTED FEMALES Q47a=1, 2, ASK Q52.

Q52. Are any sheep females in lactation now?
   ⚡ 0 No → Go to Q54.
   ⚡ 1 Yes

Q52a. How many sheep females are in lactation?
   Y Y Y Y / M M / D D

Q53. When did the lactation period start?
   Y Y Y Y / M M / D D

Q54. What is the average period of time during the year in which you can get milk from a lactating female? (Include all lactation periods)
   ⚡ 0 No → Go to Q59.
   ⚡ 1 Yes
   Q54a. What is the time unit?
   (Fill in one circle only)
   ⚡ 1 Day
   ⚡ 2 Week
   ⚡ 3 Month
Q54b: What is the number of time units per year for which you can get milk from a lactating female? [ ] per year

Q55. Do you allow lambs to suckle directly from a female?
[ ] 0 No
[ ] 1 Yes, with the mother or with a suckler sheep

Q56. For sheep milk production, what is the period for which you prefer to answer questions?
* The period selected will be used to answer a number of questions on milk production.
[ ] 1 Daily average on a typical day
[ ] 2 Yesterday (if we are in a lactation period)
[ ] 3 Last week (if we are in a lactation period)
[ ] 4 Six months
[ ] 5 Twelve months

Q57. What was the production of raw sheep milk in the period selected above? 

<table>
<thead>
<tr>
<th>Quantity of raw milk</th>
<th>Unit of measure</th>
</tr>
</thead>
</table>

Q58. Report the share of milk used in the following ways.

<table>
<thead>
<tr>
<th>Percent</th>
<th>Q58a Own use for human consumption</th>
<th>Q58b Processed on the holding into milk products</th>
<th>Q58c Given to young animals</th>
<th>Q58d Sold as raw milk</th>
<th>Q58e Other (specify)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Q58f If the share of raw milk sold (Q58d) is greater than 0%, answer the following about the milk sold.

<table>
<thead>
<tr>
<th>Unit price of the last sale</th>
<th>Unit of measure</th>
</tr>
</thead>
</table>
**AGRIS CORE MODULE**
**QUESTIONNAIRE**

**PART 4.1.6: GOATS**

**PLEASE NOTE THAT FOR THIS PART THE REFERENCE PERIOD IS 6 MONTHS**

Q59. Were goats raised on the holding during the reference period (6 months)?
- 0 No → Go to Q71.
- 1 Yes

Q59a. What goats were raised on the holding during the reference period?
- [ ] RESPONSE = [GOAT]
- [ ] 1 Dairy females
- [ ] 2 Other females
- [ ] 3 Goats less than one year old
- [ ] 4 Other goats (bucks, etc.)

THE FOLLOWING QUESTIONS (Q60 to Q63) WILL BE ASKED FOR EACH OF THE GOAT TYPES IDENTIFIED IN Q59a.

**Q60.** Answer the following questions about [GOAT].

<table>
<thead>
<tr>
<th>Number of animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>((\text{as of today}))</td>
</tr>
</tbody>
</table>

**Q61.** Answer the following questions about the changes in [GOAT] numbers during the reference period (6 months).

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Unit price of the last sale</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>((\text{as of today}))</td>
<td>((\text{as of today}))</td>
<td>((\text{as of today}))</td>
</tr>
</tbody>
</table>

**Q62.** Answer the following questions about the production of meat from [GOAT] during the reference period (6 months).

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Total carcass weight obtained</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>((\text{as of today}))</td>
<td>((\text{as of today}))</td>
<td>((\text{as of today}))</td>
</tr>
</tbody>
</table>

- Is the carcass weight reported above measured or estimated?
  - [ ] 1 Measured
  - [ ] 2 Estimated

Q62a. Were any [GOAT] slaughtered for meat on the holding during the reference period (6 months)?
- 0 No → Go to Q62d.
- 1 Yes

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Total carcass weight obtained</th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>((\text{as of today}))</td>
<td>((\text{as of today}))</td>
<td>((\text{as of today}))</td>
</tr>
</tbody>
</table>

- Is the carcass weight reported above measured or estimated?
  - [ ] 1 Measured
  - [ ] 2 Estimated

Q62b. Answer the following about [GOAT] slaughtered on the holding.

Q62c. How is the production compared to the first 6 months of the reference period?
- [ ] 1 Similar
- [ ] 2 Greater
- [ ] 3 Lower

Q63. Answer the following questions about the destinations of the holding's production of [GOAT] meat during the reference period - slaughtered on the holding or in a slaughterhouse.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit price of sale</th>
<th>Unit used to describe the price</th>
</tr>
</thead>
<tbody>
<tr>
<td>((\text{as of today}))</td>
<td>((\text{as of today}))</td>
<td>((\text{as of today}))</td>
</tr>
</tbody>
</table>

**FOR THOSE THAT REPORTED FEMALES Q59a=1, 2, ASK Q64.**

Q64. Are any goat females in lactation now?
- 0 No → Go to Q66.
- 1 Yes

<table>
<thead>
<tr>
<th>Number of animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>((\text{as of today}))</td>
</tr>
</tbody>
</table>

Q64a. How many goat females are in lactation?

Q65. When did the lactation period start?

Q66. What is the average period of time during the year in which you can get milk from a lactating female? [Include all lactation periods]

<table>
<thead>
<tr>
<th>Time unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>((\text{as of today}))</td>
</tr>
</tbody>
</table>

- Is the same unit of measure that was reported for quantities in previous questions.

**Q66a.** What is the time unit?
- [ ] 1 Day
- [ ] 2 Week
- [ ] 3 Month

**PLEASE NOTE THAT FOR THIS PART THE REFERENCE PERIOD IS 6 MONTHS**

Q71. Were goats raised on the holding during the reference period (6 months)?
- 0 No → Go to Q71.
- 1 Yes
Q66b. What is the number of time units per year for which you can get milk from a lactating female?  

Q67. Do you allow kids to suckle directly from a female?  

[Fill in all that apply]  
0 No  
1 Yes, with the mother or with a suckler goat  

Q68. For milk production, what is the period for which you prefer to answer questions?  

[Fill in one circle only]  
1 Daily average on a typical day  
2 Yesterday (if lactation is ongoing)  
3 Last week (if lactation is ongoing)  
4 Six months  
5 Twelve months  

Q69. What was the production of raw milk in the period selected above?  

Q70. Report the share of milk used in the following ways:  

Percent  

Q70a. Own use for human consumption  
Q70b. Processed on the holding into milk products  
Q70c. Given to young animals  
Q70d. Sold as raw milk  
Q70e. Other (specify)  

Total  

Q70f. If the share of raw milk sold (Q70d) is greater than 0%, answer the following about the milk sold:  

Unit price of the last sale  

PART 4.1.7 OTHER RUMINANTS  

Q71. Were other ruminants raised on the holding during the reference period (12 months)?  

0 No  
1 Yes  

Q71a. What other ruminants were raised on the holding during the reference period?  

[Fill in all that apply]  
1 Species 1 (specify)  
2 Species 2 (specify)  
3 Species 3 (specify)  

THE FOLLOWING QUESTIONS (Q72 and Q73) WILL BE ASKED FOR EACH OF THE OTHER RUMINANT TYPES IDENTIFIED IN Q71a.  

Q72. Answer the following questions about [OTHER RUMINANT].  

Number of animals  

Q72a. Number of [OTHER RUMINANT] as of today  

Q73. Answer the following questions about the changes in [OTHER RUMINANT] numbers during the reference period (12 months).  

Number of animals  

Q73a. Number of births  
Q73b. Number of live animals bought or received (including exchanged)  
Q73c. Number of animal deaths (from natural causes, illness, etc.)  
Q73d. Number of live animals sold, used as pay or wages for labour, given to landlord as rent, given for other reasons, exchanged  

Unit price of the last sale  

Unit of measure
**PART 4.1.8 PIGS**

**PLEASE NOTE THAT FOR THIS PART THE REFERENCE PERIOD IS 6 MONTHS**

Q74. Were pigs raised on the holding during the reference period (6 months)?
   0 No → Go to Q79.
   1 Yes

Q74a. What pigs were raised on the holding during the reference period?
   (Fill in all that apply)
   RESPONSE = [PIG]
   1 Piglets
   2 Breeding sows
   3 Other pigs (boars, etc.)

**THE FOLLOWING QUESTIONS (Q75 to Q78) WILL BE ASKED FOR EACH OF THE PIG TYPES IDENTIFIED IN Q74a.**

Q75. Answer the following questions about [PIG].

| Q75a Number of [PIG] as of today |
|---------------------------------
| Number of animals |

Q76. Answer the following questions about the changes in [PIG] numbers during the reference period (6 months).

| Q76a Number of births (for Q74a = 1) |
| Q76b Number of live animals bought or received (including exchanged) |
| Q76c Number of animal deaths (from natural causes, illness, etc.) |
| Q76d Number of live animals sold, used as pay or wages for labour, given to landlord as rent, given for other reasons, exchanged |

Q77. Answer the following questions about the production of meat from [PIG] during the reference period (6 months).

| Q77a Were there any [PIG] slaughtered for meat on the holding during the reference period (6 months)? |
| Q77b Answer the following about [PIG] slaughtered on the holding. |
| Q77c Is the carcass weight reported above measured or estimated? |
| Q77d Were there any [PIG] slaughtered for meat in a slaughterhouse for the holding during the reference period (6 months)? |
| Q77e Answer the following about [PIG] slaughtered in a slaughterhouse. |
| Q77f Is the carcass weight reported above measured or estimated? |
| Q77g How is the production compared to the first 6 months of the reference period? |

Q78. Answer the following questions about the destinations of the holding's production of [PIG] meat during the reference period - slaughtered on the holding or in a slaughterhouse.

* Use the same unit of measure that was reported for quantities in previous questions.

| Q78a What was the quantity of [PIG] meat for own-use? |
| Q78b What was the quantity of [PIG] meat sold? |
| Q78d What was the quantity of [PIG] meat given to service or input providers (in payment for feed, veterinary products, etc.)? |

**Unit of measure**

**Unit price of sale**

**Unit used to describe the price**
**AGRIS CORE MODULE**

**QUESTIONNAIRE**

**AGRIS CORE MODULE**

**QUESTIONNAIRE**

PLEASE NOTE THAT FOR THIS PART THE REFERENCE PERIOD IS 3 MONTHS

Q79. Were rabbits raised on the holding during the reference period (3 months)?
   - 0 No → Go to Q84.
   - 1 Yes

Q79a. What rabbits were raised on the holding during the reference period?
   - Fill in all that apply
   - RESPONSE = [RABBIT]
     - 1 Breeding females
     - 2 All other rabbits

THE FOLLOWING QUESTIONS (Q80 to Q83) WILL BE ASKED FOR EACH OF THE RABBIT TYPES IDENTIFIED IN Q79a.

Q80. Answer the following questions about [RABBIT].

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Unit price of the last sale</th>
<th>Unit of measure</th>
</tr>
</thead>
</table>

Q80a. Number of [RABBIT] as of today . . . . . . . . . . . . .

Q81. Answer the following questions about the changes in [RABBIT] numbers during the reference period (3 months).

<table>
<thead>
<tr>
<th>Number of births (for Q79a = 2)</th>
<th>Unit price of the last sale</th>
<th>Unit of measure</th>
</tr>
</thead>
</table>

Q81a. Number of births (for Q79a = 2) . . . . . . . . . . . .

Q81b. Number of live animals bought or received (including exchanged) . . . .

Q81c. Number of animal deaths (from natural causes, illness, etc.) . . . . .

Q81d. Number of live animals sold, used as pay or wages for labour, given to landlord as rent, given for other reasons, exchanged . . . . .

Q82. Answer the following questions about the production of meat from [RABBIT] during the reference period (3 months).

<table>
<thead>
<tr>
<th>Number of animals</th>
<th>Total carcass weight obtained</th>
<th>Unit of measure</th>
</tr>
</thead>
</table>

Q82a. Were any [RABBIT] slaughtered for meat on the holding during the reference period (3 months)?
   - 0 No → Go to Q82d.
   - 1 Yes

Q82b. Number of animals Total carcass weight

Q82c. Is the carcass weight reported above measured or estimated?
   - 1 Measured
   - 2 Estimated

Q82d. Were any [RABBIT] slaughtered for meat in a slaughterhouse for the holding during the reference period (3 months)?
   - 0 No → Go to Q82g.
   - 1 Yes

Q82e. Number of animals Total carcass weight

Q82f. Is the carcass weight reported above measured or estimated?
   - 1 Measured
   - 2 Estimated

Q82g. How is the production compared to the other period of the reference year?

   - Fill in one circle only
   - 1 Similar
   - 2 Greater
   - 3 Lower

Q83. Answer the following questions about the destinations of the holding’s production of [RABBIT] meat during the reference period - slaughtered on the holding or in a slaughterhouse.

   * Use the same unit of measure that was reported for quantities in previous questions.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit price of sale</th>
<th>Unit used to describe the price</th>
</tr>
</thead>
</table>

Q83a. What was the quantity of [RABBIT] meat for own-use?

Q83b. What was the quantity of [RABBIT] meat sold?

Q83c. What was the quantity of [RABBIT] meat used as pay for labour as wages?

Q83d. What was the quantity of [RABBIT] meat given to service or input providers (in payment for feed, veterinary products, etc.)?
### AGRIS CORE MODULE

#### QUESTIONNAIRE

**PLEASE NOTE THAT FOR THIS PART THE REFERENCE PERIOD IS 3 MONTHS**

Q84. Was poultry raised on the holding during the reference period (3 months)?
- [ ] 0 No
- [ ] 1 Yes → Go to Q84a.

Q84a. What poultry types were raised on the holding during the reference period?

- [ ] 1 Broilers
- [ ] 2 Laying hens
- [ ] 3 All other chickens
- [ ] 4 Turkeys
- [ ] 5 Ducks
- [ ] 6 Geese
- [ ] 7 Guinea fowl
- [ ] 8 Pigeons
- [ ] 9 Ostriches or emus
- [ ] 10 Other poultry (specify)

*The following questions (Q85 to Q89) will be asked for each of the poultry types identified in Q84a.*

Q85. Answer the following questions about [POULTRY].

Q85a. Number of [POULTRY] as of today.

Q86. Answer the following questions about the changes in [POULTRY] numbers during the reference period (3 months).

Q86a. Number of births (without Q84 = 2).

Q86b. Number of live animals bought or received (including exchanged).

Q86c. Number of animal deaths (from natural causes, illness, etc.).

Q86d. Number of live animals sold, used as pay or wages for labour, given to landlord as rent, given for other reasons, exchanged.

**NOTE - EXCLUDE LAYING HENS (Q84 = 2) FROM Q87.**

Q87. Answer the following questions about the production of meat from [POULTRY] during the reference period (3 months).

Q87a. Were any [POULTRY] slaughtered for meat on the holding during the reference period (3 months)?
- [ ] 0 No
- [ ] 1 Yes → Go to Q87b.

Q87b. Answer the following about [POULTRY] slaughtered on the holding.

Q87c. Is the carcass weight reported above measured or estimated?
- [ ] 1 Measured
- [ ] 2 Estimated

Q87d. Were any [POULTRY] slaughtered for meat in a slaughterhouse for the holding during the reference period (3 months)?
- [ ] 0 No
- [ ] 1 Yes → Go to Q87e.

Q87e. Answer the following about [POULTRY] slaughtered in a slaughterhouse.

Q87f. Is the carcass weight reported above measured or estimated?
- [ ] 1 Measured
- [ ] 2 Estimated

Q87g. How is the production compared to the other period of the reference year?

- [ ] 1 Similar
- [ ] 2 Greater
- [ ] 3 Lower

Q88. Answer the following questions about the destinations of the holding’s production of [POULTRY] meat during the reference period - slaughtered on the holding or in a slaughterhouse.

*Use the same unit of measure that was reported for quantities in previous questions.*

Q88a. What was the quantity of [POULTRY] meat for own-use? (quantity)

Q88b. What was the quantity of [POULTRY] meat sold? (quantity)

Q88c. What was the quantity of [POULTRY] meat used for pay for labour or wages? (quantity)

Q88d. What was the quantity of [POULTRY] meat given to service or input providers (in payment for feed, veterinary products, etc.)? (quantity)

**NOTE - EXCLUDE BROILERS (Q84 = 1) AND “ALL OTHER CHICKENS” (Q84= 3) FROM Q88.**

Q89. What is the average number of days during the year for which you get eggs from a [POULTRY]? (Include all egg production periods)
Q90. For egg production, what is the period for which you prefer to answer questions?

* The period selected will be used to answer a number of questions on egg production.

[Fill in one circle only]

- 1 Daily average on a typical day
- 2 Yesterday (if an egg production period is currently ongoing)
- 3 Last week (if an egg production period is currently ongoing)
- 4 Three months
- 5 Twelve months

Q91. What was the production of [POULTRY] eggs in the period selected above? . . . . . . . .

Q92. Report the share of [POULTRY] eggs used in the following ways.

<table>
<thead>
<tr>
<th>Q92a</th>
<th>Own use for human consumption</th>
<th>Percent</th>
<th>. . . . . . . . . . . . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q92b</td>
<td>Eggs used for renewal</td>
<td>Percent</td>
<td>. . . . . . . . . . . . . .</td>
</tr>
<tr>
<td>Q92c</td>
<td>Sold</td>
<td>Percent</td>
<td>. . . . . . . . . . . . . .</td>
</tr>
<tr>
<td>Q92d</td>
<td>Other (specify)</td>
<td>Percent</td>
<td>. . . . . . . . . . . . . .</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Percent</td>
<td>. . . . . . . . . . . . . .</td>
</tr>
</tbody>
</table>

Q93a. If the share of [POULTRY] eggs sold (Q92c) is greater than 0%, answer the following about the eggs sold.

Q93. Were insects raised on the holding during the reference period (12 months)?

- 0 No
- 1 Yes

Q93a. What insect types were raised on the holding during the reference period?

[Fill in all that apply] RESPONSE = [INSECT]

- 1 (Country-specific option)
- 2 (Country-specific option)
- 3 (Country-specific option)
- 4 Other insects (specify)

The following questions (Q94 to Q97) will be asked for each of the insect types identified in Q93a.

Q94. Answer the following questions about [INSECT].

Q94a. Volume or weight of [INSECT] as of today . . . . . . . . . . . . . .

Q95. Answer the following questions about the changes in [INSECT] numbers during the reference period (12 months).

* Use the same unit of measure as in Q94a above.

Q95a. Volume or weight of insects propagated on the holding . . . . . . . . . . . . . .

Q95b. Volume or weight of live insects bought or received (including exchanged) . . . . . . . . . . . . . .

Q95c. Volume or weight of insect deaths (from natural causes, illness, etc.) . . . . . . . . . . . . . .

Q95d. Volume or weight of live insects sold, used as pay or wages for labour, given to landlord as rent, given for other reasons, exchanged . . . . . . . . . . . . . .

Q96. What was the production of [INSECT] during the reference period? . . . . . . . .

Q97. Report the share of [INSECT] used in the following ways.

<table>
<thead>
<tr>
<th>Q97a</th>
<th>Own use for human consumption</th>
<th>Percent</th>
<th>. . . . . . . . . . . . . .</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q97b</td>
<td>Insects processed on the holding</td>
<td>Percent</td>
<td>. . . . . . . . . . . . . .</td>
</tr>
<tr>
<td>Q97c</td>
<td>Sold insects</td>
<td>Percent</td>
<td>. . . . . . . . . . . . . .</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Percent</td>
<td>. . . . . . . . . . . . . .</td>
</tr>
</tbody>
</table>

Q97a. If the share of [INSECT] sold (Q97c) is greater than 0%, answer the following about the production sold.

Once complete for all insect types, proceed to Part 4.1.12
**PART 4.1.12 OTHER ANIMALS AND ANIMAL PRODUCTS**

Q98. Were honeybees raised on the holding during the reference period (12 months)?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Q98a. Number of beehives in production in the holding.

<table>
<thead>
<tr>
<th></th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q98b. Production of honey during the reference period.

<table>
<thead>
<tr>
<th></th>
<th>Unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q99. Answer the following questions about other animals and animal products produced during the reference period (12 months).

<table>
<thead>
<tr>
<th>Animal Product</th>
<th>Produced?</th>
<th>Unit of production</th>
<th>Unit price used in the last sale</th>
<th>Unit of price measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shorn wool</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulled wool</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-carded animal hair</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silk worm cocoons</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Furs</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal skins</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (snails, frogs, etc.)</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PART 4.2: Raising Practices**

The series of questions on raising practices will be asked for each of the livestock types identified throughout Section 4. Once complete for all livestock types, proceed to Part 4.3.

Q100. Identify the major feeding practices for the [LIVESTOCK] during the reference period (DD/MM/YYYY to DD/MM/YYYY)

<table>
<thead>
<tr>
<th></th>
<th>Only grazing</th>
<th>Mainly grazing, with some feeding</th>
<th>Mainly feeding, with some grazing</th>
<th>Only feeding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

QUESTION Q101 IS TO BE ASKED IN THE FIRST CYCLE (FOR LIVESTOCK in general) ONLY.

The answer to this question will determine if Q101a etc. will be asked for livestock and subsequent livestock types.

Q101 Does the holding have a production and/or marketing contract for, at least one livestock type?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Q101a Does the holding have a production contract for [LIVESTOCK]?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Q101b Does the production contract cover 100% of the [LIVESTOCK] grown by the holding (exclusive contract)?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

Q101c Does the holding have a marketing contract for [LIVESTOCK]?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
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</tbody>
</table>

Q101d Does the marketing contract cover 100% of the [LIVESTOCK] grown by the holding (exclusive contract)?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>☐</td>
</tr>
</tbody>
</table>
PART 4.3: INTENTIONS FOR LIVESTOCK PRODUCTION FOR THE 12 MONTHS AFTER THE REFERENCE PERIOD

THE SERIES OF LIVESTOCK-RELATED QUESTIONS WILL BE ASKED FOR EACH OF THE LIVESTOCK TYPES IDENTIFIED THROUGHOUT SECTION 4. ONCE COMPLETE FOR ALL LIVESTOCK, PROCEED TO Q103.

Q102. Answer the following questions about production intentions for [LIVESTOCK].

Q102a. How many head of [LIVESTOCK] do you plan to raise in the upcoming period?

[Fill in one circle only]

- 1 Similar → Go to Q103.
- 2 Greater → Go to Q103.
- 3 Lower → Go to Q103.
- 4 None → Go to Q103.

Q102b. What is the main reason for changes in the number of [LIVESTOCK]?

[Fill in one circle only]

- 1 Technical
- 2 Economic
- 3 Other (specify)

Q103. Do you plan to begin raising other livestock in the upcoming period?

[Fill in one circle only]

- 0 No → Go to SECTION 5.
- 1 Yes

Q103a. What types of livestock do you plan to introduce in the upcoming period?

Livestock type | Livestock code
--- | ---
[LIVESTOCK 1] | L1
[LIVESTOCK 2] | L2
[LIVESTOCK 3] | L3
[LIVESTOCK 4] | L4

Q103b. What is the main reason for introducing [LIVESTOCK]?

[Fill in one circle only]

- 1 Technical
- 2 Economic
- 3 Other (specify)

Comments on SECTION 4:
SECTION 5: ECONOMY DURING THE REFERENCE PERIOD (DD/MM/YYYY to DD/MM/YYYY)

PART 5.1: OTHER ACTIVITIES OF THE HOLDING

Q01. Indicate other activities engaged in by the holding during the reference period.

[Fill in all that apply] RESPONSE = [OTHER ACTIVITY]

- 31 On-farm processing of agricultural products:
  - 31.11 Grain milling: production of flour, grains, meal or pellets of wheat, rye, oats, maize (corn) or other cereal grains
  - 31.12 Rice milling: production of husked, polished or converted rice; production of rice flour
  - 31.13 Processing and preserving of fruit and vegetables
  - 31.14 Manufacture of crude vegetable oil: olive oil, soybean oil, palm oil, sunflower seed oil, cottonseed oil, rape, colza or mustard oil, linseed oil, etc.
  - 31.15 Manufacture of wine
  - 31.16 Distillation of spirits
  - 31.17 Manufacture of tobacco products (cigars, chewing tobacco, etc.)
  - 31.21 Processing and preserving meat
  - 31.22 Manufacture of dairy products
  - 31.23 Manufacture of leather and related products
  - 31.24 Selling of holding's products at the market/shop (incl. preparation, packaging and transport of processed products)
  - 31.25 Production of forestry products
  - 31.26 Production, processing and preserving of fish, crustaceans and molluscs
  - 31.27 Production of renewable energy
  - 31.28 Contractual work for other holdings using the production means of this holding
  - 31.29 Accommodation, restaurant, catering and other leisure/educational activities
  - 31.30 Making handicrafts
  - 31.31 Training of animals
  - 31.32 Management and/or administration for the agricultural holding
  - 99 Other (specify)

0None

THE FOLLOWING SERIES OF QUESTIONS WILL BE ASKED FOR EACH OF THE OTHER ACTIVITY TYPES IDENTIFIED IN Q01

Q02. Identify the contribution of the [OTHER ACTIVITY] to the holding's total income during the reference period.

[Fill in one circle only]

- 1 Significant
- 2 Marginal

Q03. How would you rate the contribution of [OTHER ACTIVITY] to the holding's income, compared to the previous year?

[Fill in one circle only]

- 1 Similar
- 2 Greater
- 3 Lower

Q04. Is the holding engaged in aquaculture?

- 0 No → Go to Q07.
- 1 Yes

Q04a. Identify the aquaculture species raised.

Aquaculture species code RESPONSE = [AQUACULTURE]

- [AQUACULTURE 1]
- [AQUACULTURE 2]
- [AQUACULTURE 3]
- [AQUACULTURE 4]

THE FOLLOWING QUESTIONS (Q05 and Q06) WILL BE ASKED FOR EACH OF THE AQUACULTURE TYPES IDENTIFIED IN Q04a

Q05. What was the production of [AQUACULTURE] in the reference period?

Quantity Unit of measure

Q06. Report the share of [AQUACULTURE] used in the following ways.

Percent

Q06a. Own use for human consumption

Q06b. Sold

Total

Unit price of the last sale Unit of measure

ONCE COMPLETE FOR ALL AQUACULTURE PROCEED TO Q07.

Q07. Is the holding engaged in fishery activities?

- 0 No → Go to Q10.
- 1 Yes

Q07a. Identify the fishery species fished.

Fishery species code RESPONSE = [FISHERY]

- [FISHERY 1]
- [FISHERY 2]
- [FISHERY 3]
- [FISHERY 4]
AGRIS CORE MODULE
QUESTIONNAIRE

The following questions (Q08 and Q09) will be asked for each of the fishery species identified in Q07a.

Q08. What was the production of [fishery] in the reference period?  

Q09. Report the share of [fishery] used in the following ways.

Q09a. Own use for human consumption  

Q09b. Sold  

Q09c. If the share of [fishery] sold is greater than 0%, answer the following.  

Unit price of the last sale  

ONCE COMPLETE FOR ALL FISHERY SPECIES PROCEED TO Q10.

Q10. Is the holding engaged in forestry activities?  

Q10a. Identify the forestry products produced.  

The following questions (Q11 and Q12) will be asked for each of the forestry products identified in Q10a.

Q11. What was the production of [forestry] in the reference period?  

Q12. Was there a sale of [forestry] in the reference period?  

ONCE COMPLETE FOR ALL FORESTRY PRODUCTS PROCEED TO Q13.

Q13. What share of the household’s total income is accounted for by agricultural income (income from crops and livestock)? (for holdings in the household sector only)

Q14. How would you rate the contribution of agricultural income to the total income of the holding compared to the previous year?

Q15. What were your main information sources used for agricultural information during the reference period?

Q16. How did you consult this information during the reference period?

Q17. Does the holding participate in a farmers’ association?

Q18. Does the holding participate in a commercial or producer cooperative?

Q19. Does the holding have a bank account?
**PART 5.2  SHOCKS**

Q20. Did any severe shocks hit the holding or household during the reference period (DD/MM/YYYY to DD/MM/YYYY)?
- 0 No
- 1 Yes

Q21. Identify the three most severe shocks experienced.

**Fill in a maximum of three and rank by importance:**

1. Most severe = 1
2. 2nd most severe = 2
3. 3rd most severe = 3

**RESPONSE = [SHOCK]**

**Production shocks:**
- 1. Drought or erratic rains
- 2. Floods
- 3. Landslides
- 4. Extreme temperatures (too hot or too cold)
- 5. Unusually high level of crop pests
- 6. Unusually high level of livestock diseases
- 7. Unusually low prices for agricultural output
- 8. Unusually high prices for agricultural inputs
- 9. Theft of agricultural assets, outputs, money or valuables
- 10. Other (specify)

**Household shocks:**
- 11. Unusually high food prices
- 12. Reduction in the earnings of salaried household member(s) or loss of employment of salaried household member(s)
- 13. Serious illness or accident or death of household member(s)
- 14. Break-up of household
- 15. Conflict or violence
- 16. Other (specify)

**THE FOLLOWING QUESTION WILL BE ASKED FOR EACH OF THE TOP 3 SHOCK TYPES IDENTIFIED IN Q21.**

Q22. What was the holding’s main response to [SHOCK]?
- 1. Sold land and/or buildings
- 2. Sold crops and/or livestock
- 3. Sold holding’s other assets including machinery and equipment
- 4. Found other work, not on the holding
- 5. Received help from government
- 6. Received help from NGOs or other organizations
- 7. Reduced expenses for the holding (labour costs, capital costs, etc.)
- 8. Received help from relatives (for holdings in the household sector only)
- 9. Reduced expenses for the household (on health, education, etc.) (for holdings in the household sector only)
- 10. None of the above

**ONCE COMPLETE FOR THE SHOCKS IDENTIFIED, PROCEED TO QUESTION 23.**

Q23. Has the holding fully recovered from the shocks?
- 0 No
- 1 Yes

Q24. Do you feel that the holding is now better able to cope with the shocks?
- 0 No
- 1 Yes

Q25. What is your general perception of the level of severity of shocks compared to the past?

**(Fill in one circle only)**
- 1. Similar
- 2. Greater
- 3. Lower

**Comments on SECTION 5:**
SECTION 6: HOUSEHOLDS OF THE HOLDERS AND CO-HOLDERS

PART 6.1  SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE HOUSEHOLDS OF THE HOLDERS AND CO-HOLDERS

SECTION 6 IS ONLY TO BE ASKED FOR HOLDINGS WHERE THE HOLDER IS A CIVIL/NATURAL PERSON OR GROUP OF CIVIL/NATURAL PERSONS (SECTION 1, Q10 = 1 or 2)

Q00. (IF SECTION 1 Q10 = 2) How many households were in this holding during the reference period?  

IF THE HOLDERS ARE A GROUP OF CIVIL/NATURAL PERSONS (SECTION 1 Q10 = 2) THE QUESTIONS IN THIS PART ARE TO BE ASKED FOR EACH HOUSEHOLD IDENTIFIED IN Q00.

LIST THE INDIVIDUALS WHO NORMALLY LIVE AND EAT IN THE HOLDER(S)' HOUSEHOLD(S), STARTING WITH THE HEAD OF THE HOUSEHOLD.

Q01. What is the number of individuals who normally live and eat in the holder household?  

Q02. Identify the head of the household.

Q02a. Household number  

Q02b. Household member number  

Q02c. First name  

Q02d. Surname  

Q03. Identify the next household member.

Q03a. Household number  

Q03b. Household member number  

Q03c. First name  

Q03d. Surname  

REPEAT Q03 FOR HOUSEHOLD MEMBER 1, 4, 5, ETC.

IF Q00 > 1 REPEAT Q01 to Q03 FOR EACH HOUSEHOLD.

THE FOLLOWING QUESTION (Q04) WILL BE ASKED FOR EACH OF THE NAMES IDENTIFIED ABOVE.

Q04. Answer the following questions about [NAME].

Q04a. [NAME]’s Sex

○ 1 Male

○ 2 Female

Q04b. What is the relationship of [NAME] to the head of the household?

[Fill in one circle only]

○ 1 Head of household

○ 2 Wife/husband or consensual union partner

○ 3 Child/adopted child

○ 4 Grandchild

○ 5 Niece/nephew

○ 6 Father/mother

○ 7 Sister/brother

○ 8 Son-in-law/daughter-in-law

○ 9 Brother-in-law/sister-in-law

○ 10 Grandfather/grandmother

○ 11 Father-in-law/mother-in-law

○ 12 Others - Other relative

○ 13 Others - Servant/servant’s relative

○ 14 Others - Lodger/lodger’s relative

○ 15 Others - Other non-relative

Q04c. Does [NAME] answer for himself/herself?

○ 0 No → Go to Q04d.

○ 1 Yes → Go to Q04f.

Q04d. What is the Household number of the person who answers questions about [NAME]?

Q04e. What is the Household member number of the person who answers questions about [NAME]?

Q04f. [NAME]’s age, in completed years

Q04g. What is [NAME]’s marital status?

[Fill in one circle only]

○ 1 Married

○ 2 Consensual union

○ 3 Separated

○ 4 Divorced

○ 5 Widowed

○ 6 Never married

IF [NAME]’S AGE IS HIGHER THAN 5, ASK Q04h; OTHERWISE, GO TO Q04i.

Q04h. What is the highest level of education that [NAME] has completed?

[Fill in one circle only]

○ 1 None

○ 2 Less than primary

○ 3 Primary

○ 4 Lower secondary

○ 5 Upper secondary

○ 6 Tertiary/Post-secondary
# [NAME]'S AGE IS LESS THAN 24, ASK Q04i; OTHERWISE, GO TO Q04j.

Q04i Did [NAME] attend school during the current/last school year?
- 0 No
- 1 Yes

# [NAME]'S AGE IS GREATER THAN 15, ASK Q04j; OTHERWISE, GO TO Q04k.

Q04j Has [NAME] ever received any formal training on agriculture?
- 0 No
- 1 Yes

# [NAME]'S AGE IS GREATER THAN 15, ASK Q04k; OTHERWISE, GO TO Q04l.

Q04k Does [NAME] participate in decisions concerning crops and livestock (what/when to plant/harvest; what to grow/raise, etc.)?
- 0 No
- 1 Yes

Q04l Has [NAME] worked on this holding during the reference period, even for one day?
- 0 No
- 1 Yes

THE SERIES OF QUESTIONS WILL BE ASKED FOR EACH OF THE NAMES IDENTIFIED IN QUESTION 2, 3, ETC. ONCE COMPLETE FOR ALL NAMES, PROCEED TO SECTION 7.

Comments on SECTION 6:
### SECTION 7: LABOUR USED BY THE HOLDING

#### PART 7.1  WORK ON THE HOLDING BY THE HOLDER AND HIS/HER HOUSEHOLD MEMBERS

**SECTION 7** is only to be asked for holdings where the holder is a civil/natural person or group of civil/natural persons (section 1, Q10 = 1 or 2). IF [NAME]'s age is greater than 15, and they have worked on the holding during the reference period for at least one day (Q04l = Yes), answer the following questions.

**Q01.** Report [NAME]'s time and activities on the holding during the **MAIN** season.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q01a. Number of months</td>
<td>. . . . . . . .</td>
</tr>
<tr>
<td>Q01b. Average number of days per month</td>
<td>. . . . . . . .</td>
</tr>
<tr>
<td>Q01c. Average number of hours per day</td>
<td>. . . . . . . .</td>
</tr>
<tr>
<td>Q01d. What were [NAME]'s main tasks on the holding during the <strong>MAIN</strong> season? (Fill in one circle only)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Crop cultivation (all crops, including horticulture crops)</td>
</tr>
<tr>
<td></td>
<td>2. Raising livestock</td>
</tr>
<tr>
<td></td>
<td>3. Non-agricultural activities related to the holding</td>
</tr>
</tbody>
</table>

**Q02.** Report [NAME]'s time and activities on the holding during the **LOW** season.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q02a. Number of months</td>
<td>. . . . . . . .</td>
</tr>
<tr>
<td>Q02b. Average number of days per month</td>
<td>. . . . . . . .</td>
</tr>
<tr>
<td>Q02c. Average number of hours per day</td>
<td>. . . . . . . .</td>
</tr>
<tr>
<td>Q02d. What were [NAME]'s main tasks on the holding during the <strong>LOW</strong> season? (Fill in one circle only)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Crop cultivation (all crops, including horticulture crops)</td>
</tr>
<tr>
<td></td>
<td>2. Raising livestock</td>
</tr>
<tr>
<td></td>
<td>3. Non-agricultural activities related to the holding</td>
</tr>
</tbody>
</table>

**Q03.** Did [NAME] receive a payment for the work on the holding (wage, salary, commission, tips or any other pay)?

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0. No</td>
</tr>
<tr>
<td></td>
<td>1. Yes</td>
</tr>
</tbody>
</table>

The series of questions will be asked for all of the names identified in Part 6.1 whose age is greater than 15, and who worked on the holding during the reference period for at least one day (Part 6.1 Q04l = Yes). Once complete for all such names, proceed to Part 7.2.
PART 7.2 WORK ON THE HOLDING BY EXTERNAL WORKERS

Q04. Did the holding have any paid or unpaid workers who were not part of the household(s) of holder(s) during the reference period?
   0 No → Go to Q08.
   1 Yes

Q05. Identify the types of workers providing labour to the holding during the reference period.
* Include paid and unpaid workers

   Response = [WORKER CATEGORY]

   1 External manager
   2 External, paid, long-term employees (hired permanently - for more than a season)
   3 External, paid, temporary workers (hired for a season or less)
   4 External, paid, casual workers (hired on daily or weekly basis)
   5 Unpaid external workers (mutual helpers, unpaid trainees, volunteers, unpaid relatives living in another household, etc.)

THE FOLLOWING QUESTIONS (Q06 and Q07) WILL BE ASKED FOR EACH OF THE WORKER CATEGORIES IDENTIFIED IN Q05.

Q06. Report [WORKER CATEGORY]'s time and activities on the holding during the MAIN season.

   Q06a. Total number of [WORKER CATEGORY] in the MAIN season.
   Q06b. Total number of [WORKER CATEGORY] that worked FULL time during the MAIN season.
   Q06c. Total number of [WORKER CATEGORY] that worked PART time during the MAIN season.
   Q06d. What were [WORKER CATEGORY]'s main tasks on the holding during the MAIN season?

Q07. Report [WORKER CATEGORY]'s time and activities on the holding during the LOW season.

   Q07a. Total number of [WORKER CATEGORY] in the LOW season.
   Q07b. Total number of [WORKER CATEGORY] that worked FULL time during the LOW season.
   Q07c. Total number of [WORKER CATEGORY] that worked PART time during the LOW season.
   Q07d. What were [WORKER CATEGORY]'s main tasks on the holding during the LOW season?

ONCE COMPLETE FOR ALL WORKER CATEGORIES, PROCEED TO Q08.

Q08. Do the holding experience a shortage of workers during the peak periods?
   0 No
   1 Yes

Q09. Did the holding hire contractors over the reference period, even for a minor service?
   0 No → Go to SECTION 8.
   1 Yes → Go to Q10.

Q10. What were the main activities wholly or partially carried out by the contractor(s)?

   Activity names and codes are found in Annex 1.1c

   Response = [ACTIVITY]

   Activity name Activity code
   [ACTIVITY 1] ...
   [ACTIVITY 2] ...
   [ACTIVITY 3] ...
   [ACTIVITY 4] ...
   [ACTIVITY 5] ...
   [ACTIVITY 6] ...
   [ACTIVITY 7] ...

THE FOLLOWING QUESTION WILL BE ASKED FOR EACH OF THE ACTIVITIES IDENTIFIED IN Q10.

Q11. Was [ACTIVITY] wholly or partially carried out by a contractor?

   Response = [ACTIVITY]

   Fill in one circle only
   1 Wholly carried out by a contractor
   2 Partially carried out by a contractor

THE QUESTION WILL BE ASKED FOR EACH OF THE ACTIVITIES IDENTIFIED IN Q10. ONCE COMPLETE FOR ALL ACTIVITIES, PROCEED TO SECTION 8.

Comments on SECTION 7:
SECTION 8: HOUSEHOLD DWELLING AND ASSETS

PART 8.1 HOUSEHOLD DWELLING AND ASSETS

SECTION 8 IS ONLY TO BE ASKED FOR HOLDINGS WHERE THE HOLDER IS A CIVIL/NATURAL PERSON OR GROUP OF CIVIL/NATURAL PERSONS (SECTION 1, Q10 = 1 or 2)

Q01 to Q04 have to be repeated for every co-holder (Section 1, Q10 = 2)

Q01. Report the type of holder dwelling.

[Fill in one circle only]

- 1 Detached house
- 2 Semi-detached house
- 3 Flat or apartment in an apartment block
- 4 Room(s) in a building or compound house
- 5 Store
- 6 Basement or garage
- 7 Servants' house
- 8 Other (specify)

Q02. Does anyone in the household have a bank account?

- 0 No   Go to Q04.
- 1 Yes

Q03. Report the household members who have a bank account?

[List up to 3 household members, using Household member number)

HM number 1
HM number 2
HM number 3

Q04. Report which items and services the household has.

[Fill in all that apply]

- 1 Electricity
- 2 Landline telephone
- 3 Cell phone
- 4 Radio
- 5 Television
- 6 Internet
- 0 None of the above

Comments on SECTION 8:
### SECTION 9: END OF THE SURVEY

**PART 9.1 SURVEY TIMING - TO BE COMPLETED BY THE SURVEYOR**

<table>
<thead>
<tr>
<th>End time of the survey:</th>
<th>[ ] hour</th>
<th>[ ] minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey duration</td>
<td>[ ]</td>
<td>(calculated)</td>
</tr>
</tbody>
</table>

**PART 9.2 RESPONDENT OPINION OF SURVEY BURDEN**

Q01. What is your overall judgement on the difficulty of this survey?

[FILL IN ONE CIRCLE ONLY]

- [ ] 1 acceptable
- [ ] 2 too difficult

Q02. What is your overall judgement on the length of this survey?

[FILL IN ONE CIRCLE ONLY]

- [ ] 1 acceptable
- [ ] 2 too long

End of survey, thank you.

General comments on the survey:___
The AGRIS Rotating Module on Economy

In line with the overall AGRIS strategy, the AGRIS Rotating Module on Economy measures key aspects of agricultural incomes and expenditures and provides information on productivity at the agricultural holding level.

The primary objective of the Economy Module is the measurement of the value of agricultural production. Quantifying the actual production levels, along with the income and the costs related to agricultural production, and the destination of commodities produced, are key elements in this measurement.

Secondary objectives include measuring the non-agricultural activities undertaken by agricultural holdings and the households associated with them. This enables a better understanding of the range of endeavours carried out by holdings, as well as measurement of the income related to all activities.

In addition, the means by which holdings obtain the resources (inputs and financing) required to produce agricultural products, and how they market their output, along with an understanding of the economic relationships between agricultural holdings and households, provide a comprehensive picture of the context in which food is produced.

The Economy Module data items include:

<table>
<thead>
<tr>
<th>Identification and general characteristics of the holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income of the agricultural holding</td>
</tr>
<tr>
<td>Agricultural income</td>
</tr>
<tr>
<td>Income from processing of agricultural products and diversification activities</td>
</tr>
<tr>
<td>Subsidies and transfers received, linked to the agricultural production of the holding</td>
</tr>
<tr>
<td>Other sources of income for the household, not linked to the holding [HH-sector AH only]</td>
</tr>
<tr>
<td>Expenses of the agricultural holding</td>
</tr>
<tr>
<td>Expenses linked with agricultural production</td>
</tr>
<tr>
<td>Other inputs</td>
</tr>
<tr>
<td>Taxes and licenses</td>
</tr>
<tr>
<td>Investment, financing and insurance</td>
</tr>
<tr>
<td>Capital investment</td>
</tr>
<tr>
<td>Loans and financing</td>
</tr>
<tr>
<td>Insurance</td>
</tr>
<tr>
<td>Marketing, commercial networks and storage</td>
</tr>
</tbody>
</table>
**SECTION 1: MAIN CHARACTERISTICS OF THE AGRICULTURAL HOLDING**

**TEXT TO READ:**
This survey collects information about the economic life of agricultural holdings in the whole country, whatever the holdings’ sizes. Different types of information, including the holding revenues, expenses and prices, will be collected. The reference period for the survey is the last complete agricultural year. If the survey is conducted near the end of the current agricultural year, this will be the reference period.

**PART 1.1: IDENTIFICATION OF THE AGRICULTURAL HOLDING**

A proper identification of the holding surveyed, and of the survey respondent, is required before implementing this questionnaire. The questions proposed in Parts 1.1 & 1.2 of Section 1 of the AGRIS Core Module fit this purpose. These questions are not repeated here because it is recommended to implement this Rotating Module together with the Core Module. However, if this Rotating Module is adopted by a country to complement an existing farm-level production survey, then the inclusion of the identification questions is critical – as well as overall consistency with that production survey. Questions Q04 to Q09b in Section 1 of the AGRIS Core Module are not absolutely required, although they will help in identifying the holding and updating the sampling frames.

**PART 1.2: LAND**

Answer the following questions about AGRICULTURAL AREA UTILIZED (AAU) by this agricultural holding.

* Report all information as of today.
* Round to the nearest whole number.

**Q01. UNIT OF MEASURE used to report land areas**
- Acres
- Hectares
- Other (specify)

- If "other" is reported, provide the conversion factor.

1 of this unit of measure = ______ acres OR ______ hectares

**Q01a. Do you confirm the unit of measure?**
- No → Go to Q01
- Yes

**Q02. AAU of the agricultural holding**

| Q02a. Owned with written documentation (such as title deeds, with, purchase agreements) | Area |
| Q02b. Owned without written documentation | |
| Q02c. Rented-in, leased or sharecropped with written agreement | |
| Q02d. Rented-in, leased or sharecropped without written agreement | |
| Q02e. State or communal land and land used without written agreement (uncertified use rights) | |
| Q02f. Occupied/squatted without any permission | |

Control Total land (total of options a to g)
AGRIS ECONOMY MODULE
QUESTIONNAIRE

PART 1.3: LIVESTOCK

For each LIVESTOCK type/category/species raised by this agricultural holding, answer the following questions:

* Report all information as of today.
* Include all animals on this agricultural holding, regardless of ownership, including those that are boarded, custom-fed, or fed under contract.
* Include all animals that are kept by this operation, regardless of ownership, that are pastured on a community pasture, grazing co-op or public land.

Do not include animals owned by this agricultural holding but kept on another farm, ranch or feedlot operated by someone else.

Q04. Is there any LIVESTOCK on this agricultural holding?
   0 No → Go to Section Q05
   1 Yes

Q05. Are there any HORSES on this agricultural holding?
   0 No → Go to Q06
   1 Yes

Q05a Number of animals

Q05b Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)

Q06. Are there any MULES or HINNIES on this agricultural holding?
   0 No → Go to Q07
   1 Yes

Q06a Number of animals

Q06b Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)

Q07. Are there any ASSES on this agricultural holding?
   0 No → Go to Q08
   1 Yes

Q07a Number of animals

Q07b Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)

Q08. Are there other EQUINES on this agricultural holding?
   0 No → Go to Q09
   1 Yes

Q08a Number of animals

Q08b Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)

Q09. Are there any CATTLE (for dairy or meat purposes) on this agricultural holding?
   0 No → Go to Q10
   1 Yes

Q09a Number of animals

Q09b Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)

Q10. Are there any BUFFALOES on this agricultural holding?
   0 No → Go to Q11
   1 Yes

Q10a Number of animals

Q10b Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)
Q11. Are there any CAMELS on this agricultural holding?
   0 No  \rightarrow Go to Q12
   1 Yes

   **Q11a** Number of animals as of today

   **Q11b** Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)
   Total (total of options 1 to 3)

Q12. Are there any LLAMAS or VICUGNAS on this agricultural holding?
   0 No  \rightarrow Go to Q13
   1 Yes

   **Q12a** Number of animals as of today

   **Q12b** Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)
   Total (total of options 1 to 3)

Q13. Are there other CAMELIDS on this agricultural holding? (Please specify....)
   0 No  \rightarrow Go to Q14
   1 Yes

   **Q13a** Number of animals as of today

   **Q13b** Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)
   Total (total of options 1 to 3)

Q14. Are there any SHEEP on this agricultural holding?
   0 No  \rightarrow Go to Q15
   1 Yes

   **Q14a** Number of animals as of today

   **Q14b** Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)
   Total (total of options 1 to 3)

Q15. Are there any GOATS on this agricultural holding?
   0 No  \rightarrow Go to Q16
   1 Yes

   **Q15a** Number of animals as of today

   **Q15b** Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)
   Total (total of options 1 to 3)

Q16. Are there any SWINE or PIGS on this agricultural holding?
   0 No  \rightarrow Go to Q17
   1 Yes

   **Q16a** Number of animals as of today

   **Q16b** Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)
   Total (total of options 1 to 3)

Q17. Are there any RABBITS on this agricultural holding?
   0 No  \rightarrow Go to Q18
   1 Yes

   **Q17a** Number of animals as of today

   **Q17b** Of the above number, how many are:
   1 Owned
   2 Not owned - raised under contract
   3 Not owned - raised under other arrangements (specify)
   Total (total of options 1 to 3)

Q18. Are there any CHICKENS (broilers, laying hens, other chicken, for meat or eggs) on this agricultural holding?
   0 No  \rightarrow Go to Q19
   1 Yes

   **Q18a** Number of birds as of today
Q18b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q20a. Number as of today

Q20b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q23a. Number as of today

Q23b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q25a. Number as of today

Q25b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of animals/birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q26a. Number as of today

Q26b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q27a. Number as of today

Q27b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of animals/birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q28a. Number as of today

Q28b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q29a. Number as of today

Q29b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q30a. Number as of today

Q30b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q31a. Number as of today

Q31b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of animals/birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q32a. Number as of today

Q32b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of animals/birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q33a. Number as of today

Q33b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of animals/birds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q34a. Number as of today

Q34b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Number of units as reported in Q24a above</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q35a. Number as of today

Q35b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Number of animals/birds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q36a. Number as of today

Q36b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Number of animals/birds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q37a. Number as of today

Q37b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Number of animals/birds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q38a. Number as of today

Q38b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Number of animals/birds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q39a. Number as of today

Q39b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Number of animals/birds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q40a. Number as of today

Q40b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Number of animals/birds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q41a. Number as of today

Q41b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Number of animals/birds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q42a. Number as of today

Q42b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Number of animals/birds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q43a. Number as of today

Q43b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Number of animals/birds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q44a. Number as of today

Q44b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Number of animals/birds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)

OR

Q45a. Number as of today

Q45b. Of the above number, how many are:

<table>
<thead>
<tr>
<th>Number of animals/birds</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Owned
2. Not owned - raised under contract
3. Not owned - raised under other arrangements (specify)
Total (total of options 1 to 3)
Comments on SECTION 1:
**PART 2.1: INCOME FROM AGRICULTURAL PRODUCTION**

### SECTION 2: INCOME FOR THE AGRICULTURAL HOLDING DURING THE REFERENCE PERIOD DD/MM/YYYY to DD/MM/YYYY

**Q01.** Did the agricultural holding produce any crops during the last agricultural year?
- No [ ]
- Yes [ ]

**Q02a.** For each CROP commodity produced by this agricultural holding, answer the following questions on production and sales.

#### CROPs

<table>
<thead>
<tr>
<th>CROP</th>
<th>Quantity produced in the last agricultural year</th>
<th>Unit of measure</th>
<th>Average price received per unit of measure ($)</th>
<th>Total value of sales for the last agricultural year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.1 Wheat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01.2 Corn maize</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01.3 Rice</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01.4 Oats</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01.5 Beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01.6 Chickpeas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01.7 Peas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01.8 Sweetcorn</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01.9 Peanuts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01.10 Other oilseeds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01.11 CONTINUE FOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01.12 OTHER CROPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Q03.** Did the agricultural holding sell any LIVE ANIMALS (including insects) in the reference period?
- No [ ]
- Yes [ ]

#### LIVE ANIMALS (by type/category/species)

<table>
<thead>
<tr>
<th>Type of animal</th>
<th>Number sold during the reference period</th>
<th>Average price received per animal ($)</th>
<th>Total value of sales for the last agricultural year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mules</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buffaloes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goats</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rabbits</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Q04.** Did the agricultural holding sell any ANIMAL PRODUCTS in the reference period?
- No [ ]
- Yes [ ]

#### ANIMAL PRODUCTS (by type/category/species)

<table>
<thead>
<tr>
<th>Type of product</th>
<th>Number sold during the reference period</th>
<th>Average price received per unit ($)</th>
<th>Total value of sales for the last agricultural year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chickens</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkeys</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ducks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geese</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guinea fowls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other poultry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other animals</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Q05.** Did the agricultural holding sell any INSECTS in the reference period?
- No [ ]
- Yes [ ]

#### INSECTS (by type/category/species)

<table>
<thead>
<tr>
<th>Type of insect</th>
<th>Unit of measure</th>
<th>Number sold during the reference period</th>
<th>Average price received per unit ($)</th>
<th>Total value of sales for the last agricultural year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**AGRIS ECONOMY MODULE**

**QUESTIONNAIRE**

**PART 2.1: ANIMAL PRODUCTS**

<table>
<thead>
<tr>
<th>Q03a</th>
<th>ANIMAL PRODUCTS</th>
<th>by reference period</th>
<th>Unit of measure</th>
<th>Quantity sold</th>
<th>Unit of measure</th>
<th>Average price received per unit of measure (§)</th>
<th>Total value of sales for last agricultural year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>03.1</td>
<td>Unpackaged, fresh milk</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td>03.2</td>
<td>Eggs</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td>03.3</td>
<td>Honey</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td>03.4</td>
<td>Shorn wool</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td>03.5</td>
<td>Pulled wool</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td>03.6</td>
<td>Non-carded animal hair</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td>03.7</td>
<td>Silkworm cocoons</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td>03.8</td>
<td>Furs</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td>03.9</td>
<td>Animal skins</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td>03.10</td>
<td>Other (specify)</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
<td>→</td>
</tr>
</tbody>
</table>

**PART 2.2: AQUACULTURE AND FISHERY PRODUCTION BY THE AGRICULTURAL HOLDING**

<table>
<thead>
<tr>
<th>Q04</th>
<th>AQUACULTURE or FISHERY PRODUCTION</th>
<th>by reference period</th>
<th>Used by the household or agricultural holding</th>
<th>Sold</th>
<th>Total value of sales in the last agricultural year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No</td>
<td>Go to Q05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
<td>* Report the gross value of aquaculture production sold.</td>
<td>* Include income received for all types of sales, including production contracts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>biomass wood for heating or cooking</td>
<td>biomass wood for heating or cooking</td>
<td>biomass wood for heating or cooking</td>
<td>biomass wood for heating or cooking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquaculture in inland water</td>
<td>Aquaculture in inland water</td>
<td>Aquaculture in inland water</td>
<td>Aquaculture in inland water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquaculture in marine water</td>
<td>Aquaculture in marine water</td>
<td>Aquaculture in marine water</td>
<td>Aquaculture in marine water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fisheries</td>
<td>Fisheries</td>
<td>Fisheries</td>
<td>Fisheries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other Aquaculture (specify)</td>
<td>Other Aquaculture (specify)</td>
<td>Other Aquaculture (specify)</td>
<td>Other Aquaculture (specify)</td>
</tr>
</tbody>
</table>

**PART 2.3: FORESTRY PRODUCTION BY THE AGRICULTURAL HOLDING**

<table>
<thead>
<tr>
<th>Q05</th>
<th>FORESTRY PRODUCTS</th>
<th>by reference period</th>
<th>Used by the household or agricultural holding</th>
<th>Sold</th>
<th>Total value of sales in the last agricultural year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No</td>
<td>Go to Q06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
<td>* Report the gross value of forestry products sold.</td>
<td>* Include income received for all types of sales, including production contracts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Biomass wood for heating or cooking</td>
<td>Biomass wood for heating or cooking</td>
<td>Biomass wood for heating or cooking</td>
<td>Biomass wood for heating or cooking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wood prepared as lumber</td>
<td>Wood prepared as lumber</td>
<td>Wood prepared as lumber</td>
<td>Wood prepared as lumber</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wood processing (such as pellets)</td>
<td>Wood processing (such as pellets)</td>
<td>Wood processing (such as pellets)</td>
<td>Wood processing (such as pellets)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other forestry products (specify)</td>
<td>Other forestry products (specify)</td>
<td>Other forestry products (specify)</td>
<td>Other forestry products (specify)</td>
</tr>
</tbody>
</table>

**PART 2.4: OTHER SOURCES OF INCOME DIRECTLY RELATED TO THE AGRICULTURAL HOLDING**

<table>
<thead>
<tr>
<th>Q06</th>
<th>OTHER SOURCES OF INCOME</th>
<th>by reference period</th>
<th>Total income in the last agricultural year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No</td>
<td>Go to Q07</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
<td>Answer the following questions about OTHER SOURCES OF INCOME for the agricultural holding in the last agricultural year.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contractual work for other holdings (labour input)</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td></td>
<td>Payments received from renting out farmland or buildings</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td></td>
<td>Payments received from renting out other holding's assets (machinery, equipment, etc.)</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td></td>
<td>Payments received from cash rent</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td></td>
<td>Boarding or training of animals</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td></td>
<td>Patronage dividends and refunds from cooperatives</td>
<td>→</td>
<td>→</td>
</tr>
<tr>
<td></td>
<td>Other (specify)</td>
<td>→</td>
<td>→</td>
</tr>
</tbody>
</table>
### PART 2.5: ON-FARM PROCESSING OF AGRICULTURAL PRODUCTS BY THE AGRICULTURAL HOLDING

**Q07** Was there any ON-FARM PROCESSING of AGRICULTURAL PRODUCTS by the agricultural holding in the last agricultural year?

- [ ] 0 No → Go to Q08
- [ ] 1 Yes → Report the gross value of processing. Include landlord's share, marketing charges, taxes, transportation, etc.  
  * Include income received for all types of sales, including production contracts.

#### Quantities produced in the last agricultural year and use of renewable energy

<table>
<thead>
<tr>
<th>Activity</th>
<th>Quantity produced in the last agricultural year</th>
<th>Use of renewable energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain milling: production of flour, etc.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Rice milling: production of husked, milled, polished, glazed, parboiled or converted rice, production of rice flour</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Processing and preserving of fruit and vegetables</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Manufacture of crude vegetable oil: olive oil, soybean oil, palm oil, etc.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Manufacture of wines</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Distillation of spirit drinks</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Manufacture of tobacco products (cigars, chewing tobacco, etc.)</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Processing and preserving meat</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Manufacture of dairy products</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Manufacture of leather and related products</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

**Q08** Does this agricultural holding have plans to develop its on-farm capacity to process agricultural products?

- [ ] 0 No → Go to Q11
- [ ] 1 Yes  
  * Include plans to develop processing capacity where no processing is currently conducted.
  * Include plans to increase or alter existing processing capacity.

**Q09** Are there any constraints on the development of the on-farm processing activities?

- [ ] 0 No → Go to Q11
- [ ] 1 Yes  
  - Access to markets for products
  - Qualified labour
  - Capital
  - Knowledge
  - Quantity of available labour
  - Other (specify)

### PART 2.6: OTHER DIVERSIFICATION ACTIVITIES OF THE AGRICULTURAL HOLDING

**Q10** What are the constraints on development?

- [ ] 0 No → Go to Q11
- [ ] 1 Yes  
  - Selling of holding’s products at market/shop (incl. preparation, packaging and transport of processed products)
  - Accommodation, restaurant, catering and other leisure/educational activities
  - Making handicrafts
  - Training of animals
  - Other (specify)
  - No diversification activity

**Q11** Answer the following questions about the DIVERSIFICATION ACTIVITIES undertaken by the agricultural holding in the last agricultural year.

#### Total income in the last agricultural year ($)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Total income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling of holding’s products at market/shop</td>
<td>[ ]</td>
</tr>
<tr>
<td>Accommodation, restaurant, catering</td>
<td>[ ]</td>
</tr>
<tr>
<td>Making handicrafts</td>
<td>[ ]</td>
</tr>
<tr>
<td>Training of animals</td>
<td>[ ]</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

**Q12** Did this agricultural holding PRODUCE any ELECTRICITY from RENEWABLE SOURCES in the last agricultural year?

- [ ] 0 No → Go to Q14
- [ ] 1 Yes  
  * Include energy produced for the use of the agricultural holding and for sale.
  * For energy sold, report the total income received for the sale of energy.
  * Report the gross value of energy sold. Include landlord’s share, marketing charges, taxes, transportation, etc.
  * Include income received for all types of sales, including production contracts.

**Q13** In the last agricultural year, which forms of renewable energy were produced by this agricultural holding?

#### Produced and used by the holding

<table>
<thead>
<tr>
<th>Energy source</th>
<th>Produced and used by the holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity from biomass</td>
<td>[ ]</td>
</tr>
<tr>
<td>Electricity from wind turbines</td>
<td>[ ]</td>
</tr>
<tr>
<td>Electricity from solar panels</td>
<td>[ ]</td>
</tr>
<tr>
<td>Electricity from biogas or methane</td>
<td>[ ]</td>
</tr>
<tr>
<td>Other renewable sources used to produce electricity</td>
<td>[ ]</td>
</tr>
</tbody>
</table>
### Part 2.8: Subsidies and Transfers Received, Related to the Agricultural Holding

**Q14** Were any agricultural subsidies received by the agricultural holding in the last agricultural year?

- **0** No → Go to Q16 for HH sector (Core module, Part 1.2, Q10 = 1,2) or to Section 3 Q01 for non-HH sector (Core module, Part 1.2, Q10 = 3)
- **1** Yes → Include all types of subsidies (e.g., cash subsidies, fuel subsidies, input subsidies, subsidies for the purchase of capital items such as machinery, etc.).

*Definition: subsidies are economic benefits (such as a tax allowance) or financial aid (such as cash grants, vouchers towards purchases of inputs or interest-free loans) provided by a government, NGO, etc. to (1) maintain the income of producers, (2) support a desirable activity (such as exports), or (3) keep prices low.*

**Q15** Report the direct and indirect subsidies received related to the agricultural production of the agricultural holding.

<table>
<thead>
<tr>
<th>Direct subsidies</th>
<th>Value received in the last agricultural year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>0 0</td>
</tr>
<tr>
<td>Vouchers towards the purchase of agricultural inputs</td>
<td>0 0</td>
</tr>
<tr>
<td>Interest-free loans</td>
<td>0 0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indirect subsidies:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax breaks</td>
</tr>
<tr>
<td>Fuel</td>
</tr>
<tr>
<td>Seeds</td>
</tr>
<tr>
<td>Fertilizers</td>
</tr>
<tr>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

**Q16** In the last agricultural year, did this household receive any cash transfers used for agricultural activities?

- **0** No → Go to Q21 for HH sector (Core module, Part 1.2, Q10 = 1,2)
- **1** Yes

**Q17** For these cash transfers received in the last agricultural year and used for agricultural activity, report the provider of the transfer.

<table>
<thead>
<tr>
<th>Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends or family - living in the country</td>
</tr>
<tr>
<td>Friends or family - living abroad</td>
</tr>
<tr>
<td>Other (local merchant, employer, self-help clubs, religious groups, etc.)</td>
</tr>
</tbody>
</table>

**Q18** What was the total value of these cash transfers received in the last agricultural year, used for agricultural activity?

- **Include the value of cash transfers and an estimate of the value of non-cash transfers.**

**Q19** Report the ID code(s) of the household member(s) who received transfers

<table>
<thead>
<tr>
<th>ID Code</th>
</tr>
</thead>
</table>

**Q20** Report the ID code(s) for the household member(s) who decided how transfers would be used

<table>
<thead>
<tr>
<th>ID Code</th>
</tr>
</thead>
</table>
PART 2.9: HOUSEHOLD MEMBERS’ SOURCES OF INCOME NOT RELATED TO THE AGRICULTURAL HOLDING

THIS PART IS FOR HOLDINGS IN THE HOUSEHOLD SECTOR ONLY (Core module, Part 1.2, Q10 = 1,2); GO TO SECTION 3 Q01 FOR HOLDINGS IN THE NON HOUSEHOLD SECTOR

Q21 Answer the following questions about SOURCES OF INCOME NOT RELATED TO THE AGRICULTURAL HOLDING for HOUSEHOLD MEMBERS.
* Include all income from sources other than this agricultural holding.
* Include the income of all household members.
* Include transfers to the household or household members that are not used for agricultural activities of the holding.
* The concept of household is based on the arrangements made by persons, individually or in groups, for providing themselves with food or other essentials for living. A household may be either (a) a one-person household, that is to say, a person who makes provision for his or her own food or other essentials for living without combining with any other person to form part of a multi-person household, or (b) a multi-person household, that is to say, a group of two or more persons living together who make common provision for food or other essentials for living. The persons in the group may pool their resources and may have a common budget; they may be related or unrelated persons, or constitute a combination of persons both related and unrelated. (UN, 2015b, paragraph 2.33)

For each other source of income, report the total income received in the last agricultural year ($).

<table>
<thead>
<tr>
<th>Source of Income</th>
<th>Income Received ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income from activities on another agricultural holding</td>
<td>0</td>
</tr>
<tr>
<td>Income from other businesses operated that are not related to this agricultural holding</td>
<td>0</td>
</tr>
<tr>
<td>Income from salaries or wages from employment not related to an agricultural holding (teaching, working in a factory, etc.)</td>
<td>0</td>
</tr>
<tr>
<td>Investment income such as interest, dividends, etc. from sources other than the agricultural holding</td>
<td>0</td>
</tr>
<tr>
<td>Rental income from the rental of non-agricultural real estate</td>
<td>0</td>
</tr>
<tr>
<td>Pensions</td>
<td>0</td>
</tr>
<tr>
<td>Grains, transfers, charity</td>
<td>0</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>0</td>
</tr>
</tbody>
</table>
SECTION 3: EXPENSES OF THE AGRICULTURAL HOLDING DURING THE REFERENCE PERIOD DD/MM/YYYY to DD/MM/YYYY

UNIT OF MEASURE used to report values should be the official national currency - the use of the sign $ in this section is purely symbolic

PART 3.1: RESOURCE INPUTS USED BY THE AGRICULTURAL HOLDING

Answer the following questions about the RESOURCE INPUTS USED by this agricultural holding in the last agricultural year for all activities reported on previous section.
* Include only the agricultural business share of amounts paid.

Q01 Natural resources - land and water:
Q01a Rent paid for land and buildings (including grazing fees)
Q01b Total expenditure for water
Q02 Energy:
Q02a Fuel and lubricants (diesel, gasoline, oil, wood, natural gas, propane, etc.)
Q02b Electricity
Q02c Other (specify)

PART 3.2: INPUTS AND SERVICES USED FOR CROP PRODUCTION

Q03 Answer the following questions about INPUTS and SERVICES used for CROP PRODUCTION by the agricultural holding in the last agricultural year.
* Include production of cereal crops, pulses, fruits and vegetables.
* Include all crop inputs, whether bought, retained from the production of this agricultural holding, received through donations, from other agricultural holdings, from landlord's share in crop-sharing agreements, etc.

If "other" reported, give Quantity Unit of conversion Quantity Amount paid in the last agricultural year ($)

Q03a Seeds and plants
Q03b Fertilizer and lime
Q03c Plant protection products (PPPs)

Q04 Did the agricultural holding use any contracts and services related to crop production (custom seeding, custom fertilizer, pesticide application, etc.)?
* Include all contracts and services used, whether purchased, received through donations, exchanged for in-kind payments or traded for services or other types of arrangements (machinery for labour, for storage, for PPP disposal, etc.).

☐ D No → Go to Q06
☐ 1 Yes

Q05 Specify the contracts and services used and the nature of the arrangement

For cash only

Q05a Land clearing
Q05b Ploughing
Q05c Sowing/planting
Q05d Pest control
Q05e Weed control
Q05f Harvesting, incl. collecting fruits
Q05g Preparation of non-processed crops for primary markets

PART 3.3: INPUTS AND SERVICES USED FOR LIVESTOCK AND POULTRY PRODUCTION

Q06 Answer the following questions about INPUTS and SERVICES used for LIVESTOCK PRODUCTION by this agricultural holding in the last agricultural year.
* Include all livestock inputs used, whether purchased, received through donations, exchanged for in-kind payments or traded for services or other types of arrangements.

For cash only

Q06a Feed, supplements and hay
Q06b Veterinary services and drugs
Q06c Semen and breeding fees
Q06d Livestock purchases
Q06e Contracts and services related to livestock production - activities from 21 to 28 (see activity codes list)
Q06f Other livestock inputs (specify)
### PART 3.4: LABOUR INPUTS USED BY THE AGRICULTURAL HOLDING

Q07 Identify the types of workers providing labour to this agricultural holding in the last agricultural year.

(Roll in all that apply)
- [ ] 1 Household members
- [ ] 2 External manager
- [ ] 3 External, paid, long-term employees
- [ ] 4 External, paid, temporary workers
- [ ] 5 External, paid, casual workers
- [ ] 6 External, unpaid workers

Answer the following questions about LABOUR INPUTS USED by this agricultural holding for each of the identified category of workers (except unpaid workers) in the last agricultural year ($).

<table>
<thead>
<tr>
<th>Q07a</th>
<th>Cash salaries, wages and retributions paid (including all employee benefits)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q07b</th>
<th>Labour paid in-kind with a share of agricultural production:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Product shared Measure product shared</td>
</tr>
<tr>
<td></td>
<td>Cereals, pulses</td>
</tr>
<tr>
<td></td>
<td>Fruit, vegetables</td>
</tr>
<tr>
<td></td>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q07c</th>
<th>Other types of arrangements for labour (specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PART 3.5: OTHER INPUTS USED BY THE AGRICULTURAL HOLDING

Q08 Did you operate animal-powered equipment for the agricultural production (crop and livestock) in the last agricultural year?

- [ ] 0 No
- [ ] 1 Yes

Q09 Did you operate machine-powered equipment for the agricultural production (crop and livestock) in the last agricultural year?

- [ ] 0 No
- [ ] 1 Yes

Q10 Answer the following questions about OTHER INPUTS used by the agricultural holding in the last agricultural year.

<table>
<thead>
<tr>
<th>Q10a</th>
<th>Repairs and maintenance to farm machinery, equipment and vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount paid in the last agricultural year ($)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q10b</th>
<th>Rental and leasing of farm machinery, equipment and vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount paid in the last agricultural year ($)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q10c</th>
<th>Repairs and maintenance to farm buildings and fences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount paid in the last agricultural year ($)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PART 3.6: TAXES AND LICENSES PAID

Q11 Answer the following questions about TAXES AND LICENSES PAID by this agricultural holding in the last agricultural year.

<table>
<thead>
<tr>
<th>Q11a</th>
<th>Land and property taxes related to the agricultural holding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount paid in the last agricultural year ($)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q11b</th>
<th>Other taxes (specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount paid in the last agricultural year ($)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q11c</th>
<th>Licenses (water access rights, organic certification charges, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount paid in the last agricultural year ($)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION 4: INVESTMENTS, FINANCIAL AND INSURANCE COSTS

UNIT OF MEASURE used to report values should be the official national currency - the use of the sign $ in this section is purely symbolic

PART 4.1: CAPITAL INVESTMENTS

Q01 In the last agricultural year, did this agricultural holding invest any money in CAPITAL ITEMS or IMPROVEMENTS?
   * Do not include expenses for maintenance and repairs.
   ○ D No → Go to Q03
   ○ 1 Yes

Q02 Report the amount of capital invested for the following in the last agricultural year:

- Farm real estate purchased
- House construction or renovation
- Manure storage construction or renovation
- Construction or renovation of a storage facility for pesticides, fertilizers or fuel
- Other building construction or renovation (barns, storage sheds, machine sheds, greenhouses, etc.)
- Environmental protection improvements (shelterbelts, windbreaks, buffer strips or fences for waterways protection)
- Other land improvements (irrigation, orchard planting, draining or clearing of land, fences for purposes other than environmental protection)
- Breeding and replacement livestock intended to be on the agricultural holding for more than one year (include poultry)
- Farm machinery and equipment

Q03a Number of times
Q03b Unit of measure
Q03c Amount in dollars

PART 4.2: LOANS AND FINANCING

Q04 In the last agricultural year, did this agricultural holding invest any money in CAPITAL ITEMS or IMPROVEMENTS?
   * Do not include expenses for maintenance and repairs.
   ○ D No → Go to Q05
   ○ 1 Yes

Q05 Report the amount of money obtained in cash loans or in-kind loans in the last agricultural year:

- Types of loans:
  - Cash loan
  - In-kind loan

Q05a Type of loan provided
Q05b Amount obtained in cash loans or in-kind loans
Q05c Amount used to report values should be the official national currency - the use of the sign $ in this section is purely symbolic

Q06 Identify the reasons for not obtaining a loan:

Q06a The holding did not request
Q06b The holding request was refused
Q06c The holding could not request, no access
Q06d Other (specify)

Q07 For cash loans and in-kind loans obtained in the last agricultural year, report the provider of the loan:

(Write in all that apply circles)

- Public banks or other government institutions
- Other commercial banks and insurance companies
- Microfinance Institutions and NGOs
- Production cooperatives
- Friends or family - living in the country
- Friends or family - living abroad
- Other (local merchant, employer, self-help clubs, religious groups, etc.)

Q07a Provider of the loan
Q07b Amount obtained in the last agricultural year

Q08 What was the total value of all LOANS OBTAINED in the last agricultural year?

Agricultural Use

Q08a Value of cash loans
Q08b Estimated value of in-kind loans

Q09 Report the main USE of the LARGEST CASH LOAN OBTAINED in the last agricultural year:

- Purchase land
- Purchase machinery
- Buy agricultural inputs
- Buy or build an agricultural building or structure or dwelling
- Other agricultural purpose (specify)

Q10 Report the ID code(s) of the household member(s) responsible for deciding the use of the largest cash loan used for agricultural production.
PART 4.3: INSURANCE

Q11 Was the AGRICULTURAL HOLDING COVERED by INSURANCE in the last agricultural year?
- 0 No → Go to Q17
- 1 Yes

Q12 What type of insurance provided coverage?

(in all that apply)
- Collective agricultural insurance (the insurance was subscribed to by a group of agricultural holdings, for example through a farmer cooperative)
- Individual agricultural insurance (you or your agricultural holding are the only subscriber of the insurance)
- Other (specify)

Q13 Were any insurance payments or reimbursements received in the last agricultural year?
* Include all payments received for losses covered by an insurance policy.
* Include payments from agricultural holding insurance coverage only.
- 0 No → Go to Q15
- 1 Yes

Q14 What was the amount of insurance payments or reimbursements received by the agricultural holding in the last agricultural year?

Q15 Were any insurance premiums paid in the last agricultural year?
* Include expenses for the purchase of insurance for the agricultural holding only.
- 0 No → Go to Q17
- 1 Yes

Q16 Report the insurance premiums paid for the following types of insurance in the last agricultural year:

<table>
<thead>
<tr>
<th>Type of Insurance</th>
<th>Amount paid in the last agricultural year ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q16a Insurance related to crop production</td>
<td></td>
</tr>
<tr>
<td>Q16b Insurance related to livestock production</td>
<td></td>
</tr>
<tr>
<td>Q16c Other agricultural insurance (specify)</td>
<td></td>
</tr>
</tbody>
</table>

Q17 Identify the main insurance protection/coverage scheme that is most needed but was not purchased.

(in 1 circle only)
- Crop losses
- Livestock losses
- Revenue losses
- Other agricultural insurance related to crop or livestock production (specify)
- Not applicable - all needed insurance was purchased → Go to Section 5 Q01

Q18 For the types of insurance identified above, identify the reasons they were not purchased.

(in all applicable circles)
- Too expensive
- Not provided by the insurance companies
- Not aware of the existence of this type of insurance
- Other reason (specify)

Comments on SECTION 4:
# SECTION 5: MARKETING AND STORAGE

## PART 5.1: DESTINATION OF COMMODITIES PRODUCED

**Q01** For each of the CROP commodities (CEREAL CROPS and PULSES, FRUITS, VEGETABLES, etc.) produced by this agricultural holding, report the percent for each destination:

<table>
<thead>
<tr>
<th>Destination</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sold</td>
<td></td>
</tr>
<tr>
<td>Used as pay or wages for labour</td>
<td></td>
</tr>
<tr>
<td>Given to other service or input providers</td>
<td></td>
</tr>
<tr>
<td>Retained for household</td>
<td></td>
</tr>
<tr>
<td>Retained for farm use - for animal feed</td>
<td></td>
</tr>
<tr>
<td>Retained for farm use - seeds for the next cropping season</td>
<td></td>
</tr>
<tr>
<td>Stored for later sales</td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
</tr>
</tbody>
</table>

Total (total of questions a to h): 100%

**Q02** For each type of ANIMAL PRODUCT excluding meat (milk, eggs, honey, furs, skins, etc.) produced by this agricultural holding, report the percent for each destination:

<table>
<thead>
<tr>
<th>Destination</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sold</td>
<td></td>
</tr>
<tr>
<td>Used as pay or wages for labour</td>
<td></td>
</tr>
<tr>
<td>Given to other service or input providers</td>
<td></td>
</tr>
<tr>
<td>Retained for household</td>
<td></td>
</tr>
<tr>
<td>Retained for farm use</td>
<td></td>
</tr>
<tr>
<td>Stored for later sales</td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
</tr>
</tbody>
</table>

Total (total of questions a to g): 100%

## PART 5.2: MAIN COMMERCIAL NETWORKS

**Q03** For each commodity (CROP, LIVESTOCK, ANIMAL PRODUCTS) produced by this agricultural holding, report the most important commercial network used for selling.

- Wholesale market
- Retail market
- Farm-gate sales, stands, kiosks, U-pick
- Farmers’ markets
- Delivered to customers’ homes
- Production/marketing contracts
- Other (specify)
### PART 5.3: AGRICULTURAL MARKETS AND MARKETING

**Q04** How long does it take to reach the market where you sell most of the crop production produced by this agricultural holding?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>Under 30 minutes</td>
</tr>
<tr>
<td>☐</td>
<td>30 to 60 minutes</td>
</tr>
<tr>
<td>☐</td>
<td>1 to 2 hours</td>
</tr>
<tr>
<td>☐</td>
<td>More than 2 hours</td>
</tr>
</tbody>
</table>

**Q05** Over the past 12 months, how often did you go to the market to sell the crop production produced by this agricultural holding?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>Daily</td>
</tr>
<tr>
<td>☐</td>
<td>Weekly</td>
</tr>
<tr>
<td>☐</td>
<td>Every two weeks</td>
</tr>
<tr>
<td>☐</td>
<td>Monthly</td>
</tr>
<tr>
<td>☐</td>
<td>Less frequently than monthly</td>
</tr>
</tbody>
</table>

*FOR HH sector only, Core module, Part 1.2, Q10; Holdings in the NON HH sector should go to Q08*

**Q06** Report the ID code(s) of the household member(s) responsible for deciding what crops to sell.

<table>
<thead>
<tr>
<th>ID Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Q07** Report the ID code(s) of the household member(s) responsible for selling crops on markets.

<table>
<thead>
<tr>
<th>ID Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Q08** How long does it take to reach the market where you sell most of the livestock and animal products produced by this agricultural holding?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>Under 30 minutes</td>
</tr>
<tr>
<td>☐</td>
<td>30 to 60 minutes</td>
</tr>
<tr>
<td>☐</td>
<td>1 to 2 hours</td>
</tr>
<tr>
<td>☐</td>
<td>More than 2 hours</td>
</tr>
</tbody>
</table>

**Q09** Over the past 12 months, how often did you go to the market to sell the livestock and animal products produced by this agricultural holding?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>Daily</td>
</tr>
<tr>
<td>☐</td>
<td>Weekly</td>
</tr>
<tr>
<td>☐</td>
<td>Every two weeks</td>
</tr>
<tr>
<td>☐</td>
<td>Monthly</td>
</tr>
<tr>
<td>☐</td>
<td>Less frequently than monthly</td>
</tr>
</tbody>
</table>

*FOR HH sector only, Core module, Part 1.2, Q10 = 1,2; Holdings in the NON HH sector should go to Q12*

**Q10** Report the ID code(s) of the household member(s) responsible for deciding what livestock and animal products to sell.

<table>
<thead>
<tr>
<th>ID Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Q11** Report the ID code(s) of the household member(s) responsible for selling livestock and animal products on markets.

<table>
<thead>
<tr>
<th>ID Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
**PART 5.4: STORAGE FOR AGRICULTURAL PRODUCTS**

Q12 Does this agricultural holding have the ability to store agricultural products in order to wait for better market conditions (higher selling prices)? Include storage facilities on the agricultural holding and elsewhere, regardless of ownership.

- 0 No → End of questionnaire, thank you
- 1 Yes

Q13 Does this agricultural holding have the access to storage for CEREAL and PULSES CROPS?

- x Not applicable → Go to Q14
- 0 No → Go to Q14
- 1 Yes

**Type of storage**

(Place a tick in all applicable circles)

- Silos
- Granaries
- Pits
- Cribs or barns
- Room storage
- Piled on the ground
- Other (specify)

**For each type of storage facility identified above:**

Q13a. In own storage facility?

- 0 No
- 1 Yes

Q14 Does this agricultural holding have access to storage for ROOT CROPS?

- x Not applicable → Go to Q15
- 0 No → Go to Q15
- 1 Yes

Q14a. In own storage facility?

- 0 No
- 1 Yes

Q14b. Modern facility?

- 0 No
- 1 Yes

Q15 Does this agricultural holding have access to storage for FRUITS and OTHER VEGETABLES?

- x Not applicable → Go to Q16
- 0 No → Go to Q16
- 1 Yes

Q15a. In own storage facility?

- 0 No
- 1 Yes

Q15b. Modern facility?

- 0 No
- 1 Yes

Q16 Does this agricultural holding have access to storage for MEAT?

- x Not applicable → Go to Q17
- 0 No → Go to Q17
- 1 Yes

Q16a. In own storage facility?

- 0 No
- 1 Yes

Q16b. Modern facility?

- 0 No
- 1 Yes

Q17 Does this agricultural holding have access to storage for MILK AND MILK PRODUCTS?

- x Not applicable → Go to Q18
- 0 No → Go to Q18
- 1 Yes

Q17a. In own storage facility?

- 0 No
- 1 Yes

Q17b. Modern facility?

- 0 No
- 1 Yes

Q18 Does this agricultural holding have access to storage for OTHER AGRICULTURAL PRODUCTS?

- x Not applicable → End of questionnaire, thank you
- 0 No → End of questionnaire, thank you
- 1 Yes
Q18a In own storage facility?
   ☐ 0 No
   ☐ 1 Yes

Q18b Modern facility?
   ☐ 0 No
   ☐ 1 Yes

Comments on SECTION 5:

General comments on the survey:

End of questionnaire, thank you
Annex 4

Case Studies/Examples from Countries

TESTING THE FEASIBILITY OF FARM TYPOLOGY USING AGRIS DATA IN GHANA

Analysis of the data from the Agris test in Ghana

**Short overview of the Ghana pilot AGRIS survey**

Given that AGRIS is a new methodology developed in the context of GSARS, several components of the survey required field-testing before finalization and adoption. Ghana was selected as the first country to test and adopt the AGRIS methodology. In this context, GSARS, in collaboration with the Ghana Statistical Service (GSS) and the Ghana Ministry of Food and Agriculture (MoFA), conducted a series of field tests of different elements of AGRIS, the last of which covering the test on all five questionnaires, customized in the Ghanaian context.

The general objective of the pilot was to test the AGRIS instruments and methodologies as a standard tool to efficiently gather relevant and reliable agricultural data for policy-making and monitoring progress towards the SDGs.

The AGRIS Ghana pilot covered agricultural holdings in the household sector and was carried out in four districts of the Ashanti Region: Ahafo Ano South, Asante Akim North, Ejura Sekye Dumase and Sekyere Afram Plains. In each district, the Core Module, integrated with one of the Rotation Modules, was administered. Specifically, the test of the questionnaires was organized as follows:

- the Core questionnaire, integrated with the Economy (ECO) module, was tested in Sekyere Afram Plains;
- the Core questionnaire, integrated with the Labour (LABOUR) module, was tested in Ejura Sekye Dumase;
- the Core questionnaire, integrated with the Production Method and Environment (PME) module, was tested in Ahafo Ano South; and
- the Core questionnaire, integrated with the Machinery, Equipment and Assets (MEA), module was tested in Asante Akim North.
Objectives of the FT analysis
The analysis was carried out on the collected data to determine the list of variables in AGRIS questionnaire to be used for calculating classification variables and for determining the FT as defined in the GSARS draft Guidelines on Farm Typology. This analysis illustrates the work that countries should perform when planning their own AGRIS surveys and analysing data to compute FT classification variables and determine the FT.

Main activities and associated outputs
1. Analysis of AGRIS variables and comparison to FT classification variables
   The large number of variables collected with the AGRIS questionnaire were analysed and compared to those defined as classification variables in the GSARS draft Guidelines on Farm Typology. The analysis of the availability and correspondence between AGRIS variables and FT classification variables is detailed below and summarized at point 5 of this test report.

   The results presented below are based on the data obtained in Sekyere Afram Plains District, where the production and economics questions from the AGRIS Core and Economy modules were tested. All tables presented below are illustrative for the purposes of the study. They represent only the farms involved in the test, without extrapolation, and are not representative of the entire country and farm types.

   a. Dimension: farm profile
      The farm profile is defined by two classification variables, both directly available at farm level in Ghana’s AGRIS questionnaire.

      V1. Legal status of agricultural holder
      The question is: What is the legal status of the Holder?

      Within the test, only holdings in the household sector were interviewed. Other statuses are possible and would be covered by the regular AGRIS survey.

      TABLE A4.1. LEGAL STATUS OF THE HOLDER.

      | What is the legal status of the Holder? | % of farms |
      |----------------------------------------|-----------|
      | Civil person/natural person             | 100       |
      | Grand total                            | 100       |

      Source: Pilot AGRIS, Sekyere Afram Plain District, Ghana.

      V2. Purpose of the agricultural production
      The GSARS draft Guidelines on Farm Typology envisage two ways to define this variable: (i) using farmer declarations on the destination of agricultural production or (ii) calculating the share of sales of agricultural products in the total value of agricultural production for the reference year.
The analysis of Ghana’s AGRIS questionnaire shows that both approaches are feasible.

i. The question is: **What is the main intended destination of your agricultural production?** It has four modalities: 1 = primary for sale (selling 90 percent or more); 2 = mainly for sale (selling more than 50 percent and up to 90 percent); 3 = mainly for own consumption (selling more than 10 percent and up to 50 percent); 4 = primarily for own consumption (selling 10 percent or less). The estimation of the market integration is done based on the farmers’ opinions.

ii. The calculation of the **total value of agricultural production of the farm (agricultural output)**1 and the **share of sales** may also be done using the data on quantity of production produced for different crops and animals and the value of the sales.

The pros and cons of using one or the other estimation of the market integration variable are discussed in the GSARS draft Guidelines on Farm Typology. These are recalled below:

- Farmers’ opinions are easy to collect and reflect the usual situation on the farm. They do not consider any specific situation in the reference year.
- Farmer opinions are usually not based on calculating the agricultural output or the share of sales, but rather on his or her perception and may not correspond to the real situation. As an example, if selling agricultural products is the main source of income for the household, the perception of the farmer may be that the farm produces primary or mainly for sale, even if the share of the sales in the total value of the production is not significant.
- The estimation based on the share of the value of sales in the total value of the agricultural production of the farm corresponds to the real situation in one particular year (the reference year for data collection).
- For climate, economic, social, etc. reasons, agricultural output and the share of the sales may vary significantly from one year to another. Thus, the estimation based on the real calculation done on the basis of the reference year may differ from the usual situation.
- The share of sales is not directly available, as usually, it is not collected directly from farmers. It requires information to be collected on quantities of production and volumes of sales, as well as and additional calculations.

For the purposes of the FT, farmer declarations are considered good proxies and are used to classify farms in the context of this study. The four modalities are grouped into the two classes of market integration to obtain the following classification:

### TABLE A4.2. MARKET INTEGRATION.

<table>
<thead>
<tr>
<th>Market integration as per farmer declarations</th>
<th>% of farms</th>
<th>Average share of sales (calculated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = primary or mainly for sale</td>
<td>80</td>
<td>73%</td>
</tr>
<tr>
<td>2 = primary or mainly for own consumption</td>
<td>20</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td><strong>100</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Pilot AGRIS, Sekyere Afram Plain District, Ghana.

---

1 For further details on the calculation of agricultural output, see part 2 below.
b. Dimension: Farm Size

Two options are tested for farm classification based on farm size. The AAU in acres is collected through Ghana’s pilot AGRIS questionnaire, while the economic size of farms can be computed using other auxiliary variables.

V3. AAU of the agricultural holding

Using the classification proposed in the GSARS draft Guidelines on Farm Typology, the farms from the pilot survey can be classified into nine classes. The results presented in table A4.3 below should only be considered illustrative of classification by farm size. The number of observations in Ghana’s pilot survey is low and more detailed table has less meaning. An aggregation of the classes was done as an example:

<table>
<thead>
<tr>
<th>AAU size classes</th>
<th>% of farms</th>
<th>Total AAU (acres)</th>
<th>Total agricultural output (GHS)</th>
<th>Average AAU (acres)</th>
<th>Average agricultural output (GHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) = 0 ha of agricultural land</td>
<td>8</td>
<td>0.0</td>
<td>88 950.0</td>
<td>0.0</td>
<td>11 118.8</td>
</tr>
<tr>
<td>(2) &gt; 0 ha and ≤ 2 ha</td>
<td>21</td>
<td>22.6</td>
<td>48 430.0</td>
<td>1.1</td>
<td>2 306.2</td>
</tr>
<tr>
<td>(3) &gt; 2 ha and ≤ 10 ha</td>
<td>56</td>
<td>279.3</td>
<td>457 876.0</td>
<td>5.0</td>
<td>8 176.4</td>
</tr>
<tr>
<td>(4) &gt; 10</td>
<td>15</td>
<td>563.6</td>
<td>672 711.0</td>
<td>37.6</td>
<td>44 847.4</td>
</tr>
<tr>
<td>Grand total</td>
<td>100</td>
<td>865.4</td>
<td>1 267 967.0</td>
<td>8.7</td>
<td>12 679.7</td>
</tr>
</tbody>
</table>

Source: Pilot AGRIS, Sekyere Afram Plain District, Ghana.

Using the AAU as a classification variable has advantages and disadvantages, which are discussed in the GSARS draft Guidelines on Farm Typology. Some of these are recalled here as they apply in this case too.

- The AAU of the farm is relatively easy to compute (compared to economic variables such as farm income or output).
- Attention should be paid to accuracy in area estimation. In some countries, farmer declarations are not always precise, and it may be necessary to directly measure the parcels. Area duplication must be avoided. The physical area of the planted parcels is to be counted only once in the AAU; thus, the area planted with successive secondary crops within the same reference crop year must be excluded.
- Classification based on AAU does not account for the livestock activities of the farm or for the cultivation of more intensive crops. On the table above this is clearly illustrated in class 1, where the AAU is equal to zero but there is significant agricultural output because of the farms’ livestock breeding activities.
V4. Economic size of the agricultural holding
The disadvantages of the use of AAU for the classification of farm size may be overcome if economic size is used as a classification variable. The different variables that can be used to define the economic size of the farm are related to the level of its agricultural production, income or sales, or to the level of standardized proxies of these variables. For the purposes of this case study, the agricultural output of each interviewed farm was computed based on the data collected through the pilot AGRIS survey. The method of computation of the agricultural output and other related variables for the purposes of this test is detailed in Part 2 below. The production was valued in Ghanaian cedi (GHS). The same classes as those proposed in the GSARS draft Guidelines on Farm Typology are used without converting GHS in PPP$. An aggregation of the farm size classes is necessary to decrease the number of classes. The aggregation presented here is an example:

<table>
<thead>
<tr>
<th>Economic size classes</th>
<th>% of farms</th>
<th>Total AAU (acres)</th>
<th>Total agr. output (GHS)</th>
<th>Average AAU (acres)</th>
<th>Average agr. output (GHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) ≤ 2 000 (incl. = 0)</td>
<td>21</td>
<td>39.3</td>
<td>22,259</td>
<td>1.9</td>
<td>1,060</td>
</tr>
<tr>
<td>(2) &gt; 2 000 GHS and ≤ 10 000 GHS</td>
<td>45</td>
<td>168.3</td>
<td>223,634</td>
<td>3.7</td>
<td>4,970</td>
</tr>
<tr>
<td>(3) &gt; 10 000 GHS</td>
<td>34</td>
<td>657.8</td>
<td>1,022,074</td>
<td>19.4</td>
<td>30,061</td>
</tr>
<tr>
<td>Grand total</td>
<td>100</td>
<td>865.4</td>
<td>1,267,967</td>
<td>8.7</td>
<td>12,680</td>
</tr>
</tbody>
</table>

Source: Pilot AGRIS, Sekyere Afram Plain District, Ghana.

c. Dimension: commodity specialization
The production specialization using the Ghana pilot AGRIS survey may be defined either through a real calculation of the shares of different products in the total agricultural output, income or sales or from farmer declarations.

Considering a number of issues related to the quality of the estimation of agricultural output, which will be detailed at point 2 of this test report, farmer declarations are used in this case study.

V5. Main agricultural activity of the agricultural holding
The question is: From an economic perspective, what is the holding’s main agricultural focus for the reference period? It has three modalities: 1 = mainly crop production; 2 = mainly livestock production; and 3 = mixed production.

---

2 The volume of sales is used in countries with market-oriented farms (such as the United States of America of and Australia). However, this measurement is not recommended for developing countries, in which a significant share of farms produce predominantly for own consumption.
TABLE A4.5. PRODUCTION SPECIALIZATION.

From an economic perspective, what is the holding’s main agricultural focus for the reference period?  % of farms
1 = Mainly crop production 74
2 = Mainly livestock production 8
3 = A mix of crop and livestock production 18
Grand total 100

Source: Pilot AGRIS, Sekyere Afram Plain District, Ghana.

d. Dimension: farm diversification

Two classification variables are tested for the purposes of farm diversification. The information on other activities is spread out among three different questions of the pilot AGRIS questionnaire:

A. Were there other sources of income for the agricultural holding in the period?

B. Was there any ON-FARM PROCESSING of AGRICULTURAL PRODUCTS by the agricultural holding in the period?

C. Were there any OTHER DIVERSIFICATION ACTIVITIES by the agricultural holding in the period?

The list of agricultural activities, non-agricultural activities of the farm and off-farm activities of the household members must be clearly distinguished in the computation of the two classification variables. Off-farm activities of the household should not be considered.

V6. Presence of other economic activities on the farm

This variable is relatively easy to obtain. However, additional processing is necessary to ensure that only on-farm activities are included. As an example, the activities external to the holding gathered from the Ghana questionnaire are not included in the computation of V6.

The classes of diversification may be divided according to the most important non-agricultural activities of the farms in the country. For the purposes of this test, three modalities were defined, as an example: 1 = farms with no other economic activities; 2 = farms selling holding’s products at market or shop (including preparation, packaging and transport of processed products); and 3 = farms with other economic activities.

TABLE A4.6. PRESENCE OF OTHER ECONOMIC ACTIVITIES ON THE FARM.

<table>
<thead>
<tr>
<th>Presence of other economic activities on the farm</th>
<th>% of farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = farms with no other economic activities</td>
<td>43</td>
</tr>
<tr>
<td>2 = farms selling holding’s products at market or shop</td>
<td>55</td>
</tr>
<tr>
<td>3 = farms with other economic activities</td>
<td>2</td>
</tr>
<tr>
<td>Grand total</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Pilot AGRIS, Sekyere Afram Plain District, Ghana.
V7. Share of holding’s agricultural production in total farm income

In the pilot AGRIS questionnaire, no specific variable is related to the share of agricultural income in the total farm income (to be differentiated from the household income). This is easily justified as the quality of the farmers’ answers is expected to be low. The agricultural, farm and household income are usually computed at farm level, based on the data collected through the survey.

For the sake of simplification, the calculation of total farm output and the respective share of agricultural output for each agricultural holding are proposed to determine farm diversification. The definitions and details of the calculation of the agricultural output and the non-agricultural farm output are presented in part 2 below. The results of the classification are presented here.

Two classification options are proposed for the test – 1 = farm is not diversified (share of agricultural output = 100 percent); 2 = farm is diversified (share of agricultural output <100 percent) – to compare with the results obtained using the V6 (see also table A4.6). Using this variable would allow for a more detailed classification, identifying farms with different levels of diversification.

<table>
<thead>
<tr>
<th>Share of agricultural output in total farm output</th>
<th>% of farms</th>
<th>Average share (calculated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = farm is not diversified</td>
<td>43</td>
<td>100%</td>
</tr>
<tr>
<td>2 = farm is diversified</td>
<td>57</td>
<td>63%</td>
</tr>
<tr>
<td>Grand total</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Source: Pilot AGRIS, Sekyere Afram Plain District, Ghana.
2. **Calculation of agricultural and farm output as proxies of farm income**

For the purposes of the determination of classification variables for two of the dimensions (farm size and farm diversification), it is necessary to estimate the farm income or output from the agricultural and non-agricultural activities of the farm. The agricultural output can also be used to calculate the variables related to market integration and commodity specialization.

The GSARS draft Guidelines on Farm Typology suggest the use of total agricultural output or standard output as proxies for the farm’s agricultural income. This case study analyses the availability and computability of variables for agricultural output and total farm output for use as classification variables for the purposes of FT. For FT purposes, *Output* and *Income* are considered proxies (no cost data are used in computing income variables) or can be easily replaced by *Standard Output*, when data for three consecutive years are available.

2.1 **Computation of the main variables**

Because one of the objectives of the analysis is to test the computability of the FT classification variables, for those purposes, the variables related to total farm output were calculated regardless of a small number of data quality issues. The approach and the main issues related to the calculation are discussed here. The definitions used for the purpose of these Guidelines are given in chapter 3.2, on farm size, and chapter 3.4, on diversification.

**Output from agricultural activities on the farm**

Crop output is calculated for each crop grown on the farm. By definition, it includes the value of the production used during the reference year, regardless of the type of utilization and the variation of stocks. Simplifying, the value of the crop production from the survey reference year is considered output from crop-growing activities. Crop production is the total production in kg from the reference year, and therefore the sum of the production from all harvest periods in the Ghana pilot AGRIS questionnaire. It is then valued using the price per kg obtained from the sales data. To value crop production in all farms in the test, for those that did not sell any quantity of the given crop product, the “nearest neighbour” method was used to impute the price per kg.

The output per hectare can be calculated for each crop by dividing the relevant output by the relevant planted area.

The livestock output is calculated for cattle, sheep, goats, pigs and other livestock per livestock category (for example, in the case of cattle: per dairy cows, other cows, cattle under 1 year and other cattle). By definition, the livestock output is equal to the sum of the value of livestock production, changes in livestock value and the value of animal production. All necessary variables are collected through Ghana’s pilot AGRIS questionnaire. However, when analysing the data, issues related to data quality were identified (for example, presence of milk animals but no animals born on the farm during the reference year). For the sake of simplification and considering these issues, the livestock output is calculated as the sales of live animals, meat and other products. To consider the value of the replacement of animals and growth on hoof, it is necessary to include, in future calculations of livestock output, elements such as purchases and other received animals (to be deducted from the livestock output) and changes in livestock value (to be added to the livestock output).

The average livestock output per head can be calculated for each livestock category by dividing the relevant output by the relevant number of heads.
**Output from other (non-agricultural) economic activities on the farm**
The non-agricultural farm output is calculated for all other economic activities on the farm. By definition, it includes the value of the production used during the reference year, regardless of the type of utilization and the variation of stocks. To simplify, only the value of the sales is considered.

**Average output per hectare of crop or per head of livestock category**
As demonstrated above, the average output per hectare of crop and per head of livestock category may be calculated using the Ghana pilot AGRIS questionnaire. These averages may be estimated at farm level, as well as at aggregated level (regional, national). If the survey is carried out on a regular basis, an average for three to five years of the output can be calculated per type of crop and per livestock category, that is, the average output per hectare of crop or per head of livestock category.

Sources external to AGRIS can also be used to calculate the average output, such as average yield per crop or livestock product, prices (producer or consumer), etc. The calculated average output (see chapter 3.2 of these Guidelines for further details) applied to the structural data on area of crops and heads of livestock categories of each agricultural holding interviewed in AGRIS enables calculation of the total agricultural output of the agricultural holding and thus determination of its economic size.

Average output per hectare of crop and per head of livestock category can also be applied to farms that were not included in the AGRIS sample but for which structural data are available, thus allowing for determination of the economic farm size of those farms.

3. **Testing the combination of FT dimensions**

The collected and analysed data enable establishment of the dimensions that can be combined as suggested in the Guidelines. The different dimensions are combined to classify farms from the test, according to the defined FT. As the pilot survey was carried out on a small sample and is not representative of the entire country, the results should be seen as a test for the implementation of FT in the future, rather than as the determination of the farm types existing in Ghana.
TABLE A4.8. DETAILED CLASSIFICATION OF FARM TYPES OBTAINED FROM THE TEST OF THE GHANA PILOT AGRIS SURVEY.

<table>
<thead>
<tr>
<th>Farm, producing primary or mainly for sale</th>
<th>1.1 With agricultural output ≤ 2 000 GHS</th>
<th>1.2 With agricultural output &gt; 2 000 GHS and ≤ 10 000 GHS</th>
<th>1.3 With agricultural output &gt; 10 000 GHS</th>
<th>2.1 With agricultural output ≤ 2 000 GHS</th>
<th>2.2 With agricultural output &gt; 2 000 GHS and ≤ 10 000 GHS</th>
<th>2.3 With agricultural output &gt; 10 000 GHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>All farms from the pilot</td>
<td>13</td>
<td>80</td>
<td>100</td>
<td>8</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>1.1 Having mainly crop production</td>
<td>8</td>
<td>26</td>
<td>22</td>
<td>7</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>1.1.1 Not diversified</td>
<td>5</td>
<td>13</td>
<td>15</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1.1.2 Diversified</td>
<td>3</td>
<td>13</td>
<td>7</td>
<td>4</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.1.2 Having mainly livestock production</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.1.2.1 Not diversified</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1.1.2.2 Diversified</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.1.3 Having mixed crop and livestock production</td>
<td>2</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1.1.3.1 Not diversified</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1.1.3.2 Diversified</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Having mainly crop production</td>
<td>26</td>
<td>10</td>
<td>32</td>
<td>2</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>1.2.1 Not diversified</td>
<td>13</td>
<td>2</td>
<td>15</td>
<td>3</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.2.1 Diversified</td>
<td>13</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.2.2 Having mainly livestock production</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.2.2.1 Not diversified</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1.2.2.2 Diversified</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.2.3 Having mixed crop and livestock production</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1.2.3.1 Not diversified</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1.2.3.2 Diversified</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.3 Having mainly crop production</td>
<td>22</td>
<td>10</td>
<td>32</td>
<td>2</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>1.3.1 Not diversified</td>
<td>15</td>
<td>7</td>
<td>15</td>
<td>3</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.3.1 Diversified</td>
<td>7</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.3.2 Having mainly livestock production</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.3.2.1 Not diversified</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1.3.2.2 Diversified</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>1.3.3 Having mixed crop and livestock production</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1.3.3.1 Not diversified</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1.3.3.2 Diversified</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Pilot AGRIS, Sekyere Afram Plain District, Ghana.
Farm types are defined when crossing different typology dimensions. The dimensions and the level of classification used depend on the objectives of the analysis. For example, data users may be interested in non-diversified farms with an agricultural output between 2 000 and 10 000 GHS, regardless of their farm profile. In the test file, 16 farms meet these criteria. All relevant data collected with the AGRIS survey could be analysed for this particular type and compared to other farm types of interest.

The possibility of analysis within each farm type and between types using collected data is the main benefit of farm typology. An example is given below:

### TABLE A4.9. EXAMPLE OF DATA PRESENTED PER FARM TYPE.

<table>
<thead>
<tr>
<th>Data per farm type</th>
<th>Diversified farms with agr. output between 2 000 and 10 000 GHS</th>
<th>Non-diversified farms with agr. output between 2 000 and 10 000 GHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of farms</td>
<td>29</td>
<td>16</td>
</tr>
<tr>
<td>Average AAU (ha)</td>
<td>4.15</td>
<td>3</td>
</tr>
<tr>
<td>Average Agricultural Output (GHS)</td>
<td>4 836</td>
<td>5 211</td>
</tr>
<tr>
<td>Average Agricultural Sales (GHS)</td>
<td>2 796</td>
<td>3 809</td>
</tr>
<tr>
<td>Average Non-agricultural Output (GHS)</td>
<td>2 916</td>
<td>0</td>
</tr>
<tr>
<td>Average Farm Output (GHS)</td>
<td>7 753</td>
<td>5 211</td>
</tr>
<tr>
<td>Average share of Agricultural Output in Total Farm Output (%)</td>
<td>62%</td>
<td>100%</td>
</tr>
<tr>
<td>Average share of sales in Agricultural Output (%)</td>
<td>58%</td>
<td>73%</td>
</tr>
<tr>
<td>Share of farms with mainly crop production (%)</td>
<td>83%</td>
<td>75%</td>
</tr>
<tr>
<td>Average household size</td>
<td>5.9</td>
<td>5.6</td>
</tr>
<tr>
<td>Average number of people working on the farm</td>
<td>3.1</td>
<td>2.9</td>
</tr>
<tr>
<td>Share of female holders</td>
<td>28%</td>
<td>6%</td>
</tr>
<tr>
<td>Average age of the holder</td>
<td>45</td>
<td>44.5</td>
</tr>
<tr>
<td>Share of holder with some education</td>
<td>52%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Source: Pilot AGRIS, Sekyere Afram Plain District, Ghana.
Various analyses of the data are possible when comparing the results of different farm types. An example is given below of a comparison of the distribution of household members per age class and sex in diversified and non-diversified farms of the same size class.

**Source:** Pilot AGRIS, Sekyere Afram Plain District, Ghana.

### 4. Conclusions and recommendations

- The AGRIS methodology provides the possibility to establish a sound FT; the majority of the classification variables are included in the AGRIS Core and Economy module questionnaires and can either be collected as farmer declarations or computed based on auxiliary variables.
- Attention to data quality: when working on the calculation of the classification variables and farm classes to be constructed, the quality framework should be taken into consideration, in terms of relevance (representativeness of the results, frequency of data collection, etc.); reliability (accuracy of the collected data, particular issues of the total AAU and livestock data); timeliness and punctuality (time needed for data cleaning and processing); coherence (non-agricultural activities on the farm are to be clearly defined and distinguished from other income sources of the household)
- Use of additional sources: FT is rarely determined using only one source. In particular, when farm output or standard output is calculated, other sources, such as price statistics, production statistics or technical coefficients are often needed.
5. Ghana AGRIS variables correspondence table for the purposes of FT

The AGRIS variable labels, used to illustrate the correspondence, are drawn from Ghana’s questionnaire.

### TABLE A4.10. GHANA AGRIS VARIABLE CORRESPONDENCE FOR THE PURPOSES OF FT.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Classification variables</th>
<th>Basic data needed</th>
<th>Level</th>
<th>AGRIS variable</th>
<th>Comments on Ghana questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm status</td>
<td>V1. Legal status of the holder</td>
<td>Legal status of the holder</td>
<td>Individual (agricultural holding)</td>
<td>Core Module, Section 1, Part 1.2</td>
<td>10. What is the legal status of the Holder? Civil person/natural person only (100)</td>
</tr>
<tr>
<td></td>
<td>V2. Purpose of the agricultural production</td>
<td>What is the main purpose of production of the holding (for sale or home consumption)</td>
<td>Individual (agricultural holding)</td>
<td>Core Module, Section 1, Part 1.3</td>
<td>27. What is the main intended destination of your agricultural production? 4 modalities are available: 1 = primarily for sale; 2 = mainly for sale; 3 = mainly for own consumption; 4 = primarily for own consumption</td>
</tr>
<tr>
<td>Dimension</td>
<td>Classification variables</td>
<td>Basic data needed</td>
<td>Level</td>
<td>AGRIS variable</td>
<td>Comments on Ghana questionnaire</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------------------</td>
<td>--------------------------------------------------------</td>
<td>-----------------------------------</td>
<td>-----------------------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td><strong>Farm size</strong></td>
<td>V3. Agricultural land of the holding</td>
<td>Total agricultural land of the holding</td>
<td>Individual (agricultural holding)</td>
<td>Core Module, Section 3, Part 3.2</td>
<td>Estimation of the area of the holding</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 3, Part 3.2</td>
<td>AAU in ha (calculated variable)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cultivated area</td>
<td></td>
<td>Core Module, Section 3, Parts 3.1 and 3.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Number of animals present, slaughtered on the farm and sold</td>
<td></td>
<td>Core Module, Section 4</td>
<td>Average yield of main crops (kg/ha) and price per kg can be calculated. There are 7 main crops grown by more than 30 out of 100 farms in the test:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Physical quantities produced of vegetal and animal production</td>
<td></td>
<td></td>
<td>• maize</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Yield of crops</td>
<td>Aggregated at national or lower regional level</td>
<td>Core Module, Section 3, Part 3.1 and Section 4</td>
<td>• yam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Prices at farm gate</td>
<td></td>
<td></td>
<td>• cassava</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Technical information: fertility, mortality of newborn, length of production cycle, etc.</td>
<td></td>
<td></td>
<td>• groundnuts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• plantain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• rice</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• cowpeas</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>Classification variables</td>
<td>Basic data needed</td>
<td>Level</td>
<td>AGRIS variable</td>
<td>Comments on Ghana questionnaire</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------</td>
<td>-------------------</td>
<td>-------</td>
<td>----------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Farm size</td>
<td>V4. Economic size of the holding</td>
<td>Area of crops Number of scattered trees Number of livestock per type</td>
<td>Individual (agricultural holding)</td>
<td>Core Module, Section 3, Part 3.1</td>
<td>List of 72 crops of which only 18 were used; most frequent are maize, yam, cassava, groundnuts, plantain, rice, cowpeas; less frequent are pepper (hot), okra, cocoyam; single farms cultivate garden eggs, sweet pepper, tomato, oil palm, millet, banana, other temporary or permanent crops. The planted area refers only to the area planted within the specific harvest period. The total planted area by crop is equal to the sum of the planted area for each harvest period.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 4, Part 4.1.2</td>
<td>Number of cattle present (1=Dairy cows, 2=Other cows, 3=Under 1 year; 4=Other cattle)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 4, Part 4.1.5</td>
<td>Number of sheep present (1=Females, one year old or more, 2=Males, one year old or more, 3=less than one year old)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 4, Part 4.1.6</td>
<td>Number of goats present (1=Females, one year old or more, 2=Males, one year old or more, 3=less than one year old)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 4, Part 4.1.8</td>
<td>Number of pigs present (1=Piglets, 2=Breeding sows, 3=Other pigs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 4, Part 4.1.10</td>
<td>Number of poultry present (1=Broilers (commercial), 2=Layers (commercial), 3=Local cockerels, 4=Local layers, 5=Guinea fowls, etc.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 4, Part 4.1.11</td>
<td>Number of equines present (1=Racing horses – male, 2=Racing horses – female, 3=Mules or hinnies, 4=Donkeys (Asses), 5=Others)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 4, Part 4.1.12</td>
<td>Number of rabbits or grass cutters broken down by breeding females and others</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 4, Part 4.1.12</td>
<td>Number of beehives in production on the holding</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 4</td>
<td>Other animals raised (Yes/No)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 4, Part 4.1.12</td>
<td>Other animal production (Yes/No)</td>
</tr>
<tr>
<td>Dimension</td>
<td>Classification variables</td>
<td>Basic data needed</td>
<td>Level</td>
<td>AGRIS variable</td>
<td>Comments on Ghana questionnaire</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>---------------------------</td>
<td>----------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Product specialization</td>
<td>V5. Main agricultural activity of the holding</td>
<td>Calculation based on V4 or farmer declarations on activity that makes bigger contribution to total agricultural production</td>
<td>Individual (agricultural holding)</td>
<td>Core Module, Section 1, Part 1.3</td>
<td>24. From an economic perspective, what is the holding’s main agricultural focus for the reference period? 3 options: 1 = mainly crop; 2 = mainly livestock; 3 = mixed</td>
</tr>
<tr>
<td>Diversification</td>
<td>V6. Presence of other economic activities on the farm</td>
<td>Other on-farm economic activities of the holding</td>
<td>Individual (agricultural holding)</td>
<td>Core Module, Section 5, Part 5.1 OR Economy module, Section 2, Part 2.2</td>
<td>2. Was there any AQUACULTURE or FISHERY PRODUCTION by this agricultural holding in the period?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 5, Part 5.1 OR Economy module, Section 2, Part 2.3</td>
<td>3. Were any FORESTRY PRODUCTS produced by this agricultural holding in the last agricultural year?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Core Module, Section 5, Part 5.1 OR Economy Module, Section 2, Parts 2.4–2.7</td>
<td>5. Were there other sources of income for the agricultural holding in the period? 6. Was there any ON-FARM PROCESSING of AGRICULTURAL PRODUCTS by the agricultural holding in the period? 11. Were there any OTHER DIVERSIFICATION ACTIVITIES by the agricultural holding in the period? None of the above (non-presence of other diversification activities on the farm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Details for each of the activities are also available Three classification options are proposed for the test: 1 = farms with no other economic activities 2 = farms selling holding’s products at market or shop 3 = farms with other economic activities</td>
</tr>
</tbody>
</table>
### Desk Study on Farm Typology in Zambia

#### 1. Introduction

In the context of the preparation of these Guidelines, a desk study in Zambia was carried out by the Central Statistical Office (CSO) of Zambia with the assistance of GSARS, aiming at testing the implementation of the FT at national level by:

- defining the unit of observation and scope at national level;
- analysing existing data sources, identifying missing data, deciding on possible proxies to replace the missing data and discussing the need for new data collection; and
- calculating the variables and establishing a classification of farms within the proposed FT dimensions.

Within the study, Zambia analysed the existing sources and set an initial frame of the FT for national purposes. The results of the study were presented to the key stakeholders in FT at national level: the CSO, the Ministry of Agriculture, the Ministry of Livestock and Fishery, the Indaba Agricultural Policy Research Institute (IAPRI) and the National Union of Small-scale Farmers Association of Zambia. The country received assistance in testing the calculation of economic farm size based on the available data. This section summarizes the results of the desk study.

The tables presented in this report are not to be considered official, but rather a demonstration of the FT methodology, as quality check procedures have not been conducted on some of the data, which cannot therefore be considered final. There were limitations with the way the questionnaires for small-, medium- and large-scale farms are currently configured. However, this issue will be solved in the next PHS.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Classification variables</th>
<th>Basic data needed</th>
<th>Level</th>
<th>AGRIS variable</th>
<th>Comments on Ghana questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>V7 Share of holding’s agricultural production in total farm income</td>
<td>Proportion of income from agriculture in total farm income</td>
<td>Individual (agricultural holding)</td>
<td>To be calculated</td>
<td>No specific variable is related to the share of agricultural income in the total farm income (NOT household income). It must be computed once total income is determined. To simplify, the calculation of farm output and the use of the share of agricultural output in the total farm output are proposed to determine the diversification. 2 classification options are proposed for the test: 1 = farms not diversified (share of agricultural output = 100%); 2 = diversified farms, including: farms are less diversified (≥75% and &lt;100%); farms are moderately diversified (≥25% and &lt;75%) and farms are very diversified (&lt;25%)</td>
<td></td>
</tr>
</tbody>
</table>
2. Methodological frame of the FT in Zambia

a. Scope

The FT is be applied to all agricultural holdings regardless of size or legal status. In Zambia, no farm threshold is applied in agricultural statistics.

The PHS\(^3\) is defined as all land wholly or partly operated for agricultural purposes such as growing crops, fish farming or raising livestock or raising poultry for production under single technical management. A holding may consist of one or more parcels located in one or more separate areas; the parcels share the same means of production, such as labour.

Small-scale farms as a subpopulation of farms are of particular interest for policy relevant FTs. By definition, small-scale farms are always managed by households.

Large farms are defined based on size, regardless of their legal status (households or establishments), market orientation etc.

\(^3\) The PHS is an annual sample survey carried out with two questionnaires, one for small and medium farms and one for large farms. Large farms are surveyed exhaustively. Data sets for the 2012–2015 period are made available for the FT desk study.
<table>
<thead>
<tr>
<th>Unit name</th>
<th>Definition</th>
<th>Difference from FAO definition of the agricultural holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural holdings</td>
<td>PHS definition: All land wholly or partly operated for agricultural purposes such as growing crops, fish farming or raising livestock or raising poultry for production under single technical management. A holding may consist of one or more parcels located in one or more separate areas, the parcels share the same means of production, such as labour. This is irrespective of title, legal form or size. No farm threshold is applied.</td>
<td>The definition is in line with the FAO definition.</td>
</tr>
<tr>
<td>Agricultural household</td>
<td>Definition of PHS: an agricultural household is a household in which at least one member is carrying out some agricultural activity, that is, the growing of any crop or raising of livestock, raising of poultry or fish farming.</td>
<td>Subpopulation of agricultural holdings</td>
</tr>
<tr>
<td>Small-scale farm</td>
<td>This is an agricultural holding with area under crops between 0.25 ha and 2 ha inclusive.</td>
<td>Subpopulation of agricultural holdings, also used by the NUSFAZ (National Union of Small-Scale Farmers Association of Zambia).</td>
</tr>
<tr>
<td>Large-scale farm</td>
<td>Farms of 20 ha or more, regardless of juridical status. Also, any agricultural household that has parent stocks of chickens, irrespective of number, is considered large-scale.</td>
<td>Subpopulation of agricultural holdings</td>
</tr>
<tr>
<td>Household</td>
<td>All members of one family who are related by blood, marriage or adoption, including other persons, such as house-help or farm labourers, if any, who normally live together in one house or closely related premises and take their meals from the same kitchen. It may also consist of one member.</td>
<td>Subpopulation of agricultural holdings, farms from the household sector with livestock or aquaculture activities</td>
</tr>
<tr>
<td>Establishments</td>
<td>An establishment is an enterprise, or part of an enterprise, that is situated in a single location and in which only a single productive activity is carried out or in which the principal productive activity accounts for most of the value added.</td>
<td>Subpopulation of agricultural holdings, farms from the non-household sector with livestock or aquaculture activities. Note that this definition is originally from the 2008 SNA.</td>
</tr>
</tbody>
</table>
b. List of activities
According to the national methodology, agricultural activities cover:

- crop production;
- livestock breeding; and
- fishery and aquaculture.

A list of other economic activities to be decided from RALS questionnaire, 9.1 a (full list) and 9.2a (part of the list) is given below.

<table>
<thead>
<tr>
<th>Type of activities</th>
<th>Detailed activities</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural activities</td>
<td>crops, livestock, fishery and aquaculture</td>
<td>Aquaculture and fishery (from ponds) is considered in scope (from workshop)</td>
</tr>
<tr>
<td>Non-agricultural farm activities</td>
<td>These are formal or informal business activities in which household members may engage for income generation. It does not include selling of own produce, or labour for wages.</td>
<td>Mentioned during the workshop but not exhaustively: forestry, including fruits and other forest products collection, processing of own agricultural production, fishing from natural waters</td>
</tr>
<tr>
<td>Off-farm activities</td>
<td>These are activities that include all formal salaried employment and all casual labour for which members were paid cash or an in-kind wage, including agricultural and non-agricultural labour. It also includes the value of pensions received.</td>
<td></td>
</tr>
</tbody>
</table>

Zambia is divided into ten Provinces, for administrative purposes. Each Province is further divided into districts. The ten Provinces are:

- Central
- Copperbelt
- Eastern
- Luapula
- Lusaka
- Muchinga
- Northern
- Western
- North Western
- Southern

The Rural Agricultural Livelihood Survey (RALS) is a supplementary survey to the PHS covering only small- and medium-scale farms. The survey is a rich source for FT variables; however, during the mission, it could not be confirmed whether a linkage between individual farm records in PHS and RALS could be made.
Zambia is divided into three major AEZs:

- **Region I**: this region receives less than 800 mm of rainfall annually and constitutes 12 percent of Zambia’s total land area.
- **Region II**: receives between 800 mm and 1000 mm of annual rainfall and covers 42 percent of the country. The region is further subdivided into Region IIa and Region IIb.
- **Region III**: receives between 1000 mm and 1500 mm of rainfall annually and constitutes 46 percent of the country’s total land area.

Data on area cultivated to various crops, the number of livestock by type, and crop and animal production is generally produced and disseminated at Province level. Occasionally, the data has also been produced at the level of AEZs. This is done especially during the presentation of the Crop Forecasting Survey (CFS) results. The map below depicts the configuration of the ecological zones.

**FIGURE A4.1. AEZS OF ZAMBIA.**

The thick blue lines represent provincial and international boundaries.

The grey lines are district boundaries.
3. **Sources of data for classification variables and missing data**

To date, several data sources have been analysed for the study. The following data sets were used:

A. The Supplemental Survey (SS) to the PHS. This survey interviews the same households canvassed during the CFS and, where possible, the PHS. Its questionnaire includes questions that are of interest to researchers but that, are not included in the PHS questionnaire. It is a rich source of data for the FT variables. This survey has since been renamed the Rural Agricultural Livelihoods Survey (RALS). The SS/RALS are panel surveys.

B. The PHS. The PHS is a two-pronged survey. Small- and medium-scale farms are covered on a sample basis, while large-scale farms are covered on a 100-percent basis. Data sets for the small and medium-scale farms, and for the large-scale farms, are available for about two years.

C. The Living Conditions Monitoring Survey (LCMS).

Besides the data sets, other related documents were collected, such as the questionnaires and the enumerator training manuals, to facilitate comprehension of the data.

A Livestock and Aquaculture Census was carried out in early 2018. The data editing was still ongoing during the desk study.
### TABLE A4.13. LIST OF CLASSIFICATION VARIABLES, SOURCES OF EXISTING DATA AND MISSING DATA IDENTIFIED.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Classification variables</th>
<th>Items needed</th>
<th>Level</th>
<th>Sources OR missing</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm profile</td>
<td>V1. Legal status of the agricultural holder</td>
<td>Legal status of the holder AND/OR Legal status of the holding</td>
<td>Individual (agricultural holding)</td>
<td>SS, RALS, PHS-(LSF)</td>
<td>The vast majority of Zambia’s farmers are in a situation similar to entrepreneurs, as explained in the Guidelines. Most of their holdings are on customary land held on trust on behalf of the populace by chiefs. The land is considered communal, although under special circumstances, the land can be converted to state land and title deeds issued.</td>
</tr>
<tr>
<td></td>
<td>V2. Purpose of the agricultural production</td>
<td>What is the main purpose of the production of the holding (for sale or home consumption) as per farmer declarations OR • Total annual value of agricultural production • Annual value of sales • Annual value of own consumption</td>
<td>Individual (agricultural holding)</td>
<td>LCMS</td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>Classification variables</td>
<td>Items needed</td>
<td>Level</td>
<td>Sources OR missing</td>
<td>Notes</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------</td>
<td>--------------</td>
<td>-------</td>
<td>-------------------</td>
<td>-------</td>
</tr>
<tr>
<td>V3. AAU of the holding</td>
<td>• Total AAU of the holding</td>
<td>Individual (agricultural holding)</td>
<td>LCMS, PHS, SS, RALS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V4. Economic size of the holding</td>
<td>• Cultivated area by crop</td>
<td></td>
<td></td>
<td>PHS, RALS, SS, LCMS</td>
<td>List of crops covered: *</td>
</tr>
<tr>
<td></td>
<td>• Number of animals present, slaughtered on the farm and sold</td>
<td>Aggregated at national or lower regional level</td>
<td></td>
<td>PHS, RALS, SS, LCMS</td>
<td>List of livestock types and animal production covered: Cattle, pigs, goats, sheep, chickens, guinea fowls, ducks, geese, turkeys</td>
</tr>
<tr>
<td></td>
<td>• Physical quantities produced of vegetal and animal production</td>
<td></td>
<td></td>
<td>PHS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Yield of crops</td>
<td></td>
<td></td>
<td>PHS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Prices at farm-gate • Market price</td>
<td></td>
<td></td>
<td>PHS, AMIC</td>
<td>AMIC collects the market price for the main crops</td>
</tr>
<tr>
<td></td>
<td>• Technical information: fertility, mortality, length of production cycle, etc.</td>
<td></td>
<td></td>
<td>Missing</td>
<td>No technical coefficients covered</td>
</tr>
<tr>
<td></td>
<td>• Area of crops • Number of scattered trees • Number of livestock per type</td>
<td>Individual (agricultural holding)</td>
<td></td>
<td>PHS</td>
<td></td>
</tr>
<tr>
<td>V4. Economic size of the holding (measured by farm annual revenue – optional)</td>
<td>• Annual farm revenue (Optional) annual farm revenue broken down as follows: • from crop production • from livestock production In addition: • revenue from forestry • revenue from fisheries</td>
<td></td>
<td></td>
<td>LCMS</td>
<td></td>
</tr>
<tr>
<td>V5. Main agricultural activity of the holding</td>
<td>Farmer declarations on main activity OR Calculation based on V4</td>
<td>Individual (agricultural holding)</td>
<td>LCMS, SS, RALS, PHS</td>
<td>Calculation</td>
<td></td>
</tr>
</tbody>
</table>
The pluriactivity of the holder and the holder’s family may be defined by the variable named “Importance of the time spent working on the agricultural holding by the holder and holder’s family”. However, the test conducted during the desk study showed that such information is not currently collected.

### TABLE A4.14. DATA SOURCES QUALITY ASSESSMENT FOR THE PURPOSES OF THE FT.

<table>
<thead>
<tr>
<th>Name of the source</th>
<th>Owner of the source</th>
<th>Unit of Observation</th>
<th>Coverage of the units</th>
<th>Coverage of the agricultural activities</th>
<th>Last year of reference of available data</th>
<th>FT items concerned and level of aggregation</th>
<th>Quality issues and other notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock and Aquaculture Census*</td>
<td>GRZ (CSO)</td>
<td>Household</td>
<td>100%</td>
<td>100%</td>
<td>2018</td>
<td>V1, V3?</td>
<td>Area of crops and number of livestock at individual level</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Good quality data, although timeliness is an issue</td>
</tr>
<tr>
<td>LCMS</td>
<td>GRZ (CSO)</td>
<td>Household</td>
<td>Sample</td>
<td>100%</td>
<td></td>
<td>V4, V6. Field (lowest level), V3?</td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>IAPRI</td>
<td>Household</td>
<td>Sample</td>
<td>100%</td>
<td></td>
<td>V1, V4, V6, V3?</td>
<td></td>
</tr>
<tr>
<td>PHS</td>
<td>GRZ (CSO)</td>
<td>Household</td>
<td>Sample</td>
<td>100%</td>
<td>2014/2015 Season</td>
<td>V4, V6, V3?</td>
<td>Timeliness is an issue</td>
</tr>
</tbody>
</table>
4. Definition of the farm typology dimensions and classification variables

Once all classification variables for which data are available are calculated for each agricultural holding, the classification can be done applying the combination of dimensions. Some farm types, classes or dimensions may be not significant for the country and aggregation may be proposed.

Pursuant to an analysis of the available data, the following variables are proposed for testing FT determination in Zambia:

a. Farm profile

**V1. Legal status of agricultural holder**

The legal status of the farm is currently not collected in the PHS. It is assumed that all small- and medium-scale farms are run by households, while large farms may be establishments or may also be run by households. Different options were discussed to identify legal entities within large farms:

- Zambia has a business register that can be matched with the large farm database to identify the establishment.
- The questionnaire for large farms collects data on farm name and number, which may be also used as an indication of whether the farm is a legal person or is run by a household.

In the long term, a question on the legal status of the farm could be included in the PHS questionnaire for large farms.

For the purposes of the desk study, the following two classes are proposed:

1. Households (small- and medium-scale farms from the PHS)
2. Large farms (large-scale farms as defined in the PHS)

**TABLE A4.15. DISTRIBUTION OF AGRICULTURAL HOLDINGS BY LEGAL STATUS.**

<table>
<thead>
<tr>
<th>Province</th>
<th>% of AH</th>
<th>of which by legal status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Households</td>
</tr>
<tr>
<td>Zambia</td>
<td>100%</td>
<td>99.902%</td>
</tr>
<tr>
<td>Central</td>
<td>11%</td>
<td>11.387%</td>
</tr>
<tr>
<td>Copperbelt</td>
<td>5%</td>
<td>5.319%</td>
</tr>
<tr>
<td>Eastern</td>
<td>19%</td>
<td>18.650%</td>
</tr>
<tr>
<td>Luapula</td>
<td>10%</td>
<td>10.451%</td>
</tr>
<tr>
<td>Lusaka</td>
<td>3%</td>
<td>3.139%</td>
</tr>
<tr>
<td>Muchinga</td>
<td>8%</td>
<td>8.242%</td>
</tr>
<tr>
<td>Northern</td>
<td>12%</td>
<td>12.158%</td>
</tr>
<tr>
<td>North-Western</td>
<td>7%</td>
<td>7.049%</td>
</tr>
<tr>
<td>Southern</td>
<td>13%</td>
<td>13.409%</td>
</tr>
<tr>
<td>Western</td>
<td>10%</td>
<td>10.098%</td>
</tr>
</tbody>
</table>

Source: PHS 2015, CSO, Zambia.
**V2. Purpose of agricultural production**

There are no questions related to the purpose of agricultural production in the current PHS questionnaires. It was therefore proposed to calculate the total value of agricultural production and the share of sales in it. The value of the sales of agricultural products is available in the PHS data sets. The total value of agricultural production was computed during the mission, on the basis of the PHS 2015 data set (see chapter 5 for further details). The following two classes are proposed:

1. producing mainly for own consumption (total value of sales/total value of agricultural production < 50 percent); and
2. producing mainly for sale (total value of sales/total value of agricultural production ≥ 50 percent)

In the long term, a question on the purpose of agricultural production could be included in the two PHS questionnaires to use farmer declarations, rather than the calculation method.

<table>
<thead>
<tr>
<th>Purpose of production</th>
<th>% of AH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zambia</td>
<td>100%</td>
</tr>
<tr>
<td>Producing mainly for own consumption</td>
<td>81%</td>
</tr>
<tr>
<td>Producing mainly for sale</td>
<td>19%</td>
</tr>
</tbody>
</table>

Source: PHS 2015, CSO, Zambia.

The crossing of the two variables gives the four classes of the farm profile:

1. households producing mainly for own consumption;
2. households producing mainly for sale;
3. large farms producing mainly for sale; and
4. large farms producing mainly for own consumption.

Class 4 is expected to be insignificant and may be aggregated to class 3.

**b. Farm size**

**V3. AAU of the agricultural holding**

The total agricultural land can be computed for all farms in the two PHS questionnaires. For the purposes of the FT test in Zambia, the farm size will be defined by the size of agricultural land using the following three classes.

1. small (total agricultural land of the agricultural holding < 5ha)
2. medium (total agricultural land of the agricultural holding ≥ 5ha and < 20 ha)
3. big\(^5\) (total agricultural land of the agricultural holding ≥ 20ha)

\(^5\) Big farms classified according to the size of agricultural area differ from large-scale farms as defined in the PHS for the purposes of the survey, and are used in V1 as a legal status classification.
TABLE A4.17. DISTRIBUTION OF AGRICULTURAL HOLDINGS BY SIZE OF AGRICULTURAL LAND.

<table>
<thead>
<tr>
<th>Province</th>
<th>% of agricultural holding</th>
<th>Average land of the holdings (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Small farms</td>
</tr>
<tr>
<td>Zambia</td>
<td>100%</td>
<td>65%</td>
</tr>
<tr>
<td>Central</td>
<td>11%</td>
<td>6%</td>
</tr>
<tr>
<td>Copperbelt</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Eastern</td>
<td>19%</td>
<td>10%</td>
</tr>
<tr>
<td>Luapula</td>
<td>10%</td>
<td>9%</td>
</tr>
<tr>
<td>Lusaka</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Muchinga</td>
<td>8%</td>
<td>6%</td>
</tr>
<tr>
<td>Northern</td>
<td>12%</td>
<td>8%</td>
</tr>
<tr>
<td>North-Western</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>Southern</td>
<td>14%</td>
<td>6%</td>
</tr>
<tr>
<td>Western</td>
<td>10%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Source: PHS 2015, CSO, Zambia.

V4. Economic size of the agricultural holding

In the long term, the farm size of the agricultural holding shall be defined as economic size based on the total agricultural output of the farms. Two options discussed in the Guidelines were tested: (i) using average output per hectare of crop and per head of livestock; and (ii) using real production data per farm. The calculation of average output was tested for some main crops and livestock categories. The computation of the value of agricultural production per farm was tested using the real production data per farm and applying the average price per quantity of production. CSO Zambia needs further assistance to finalize the calculation of the economic farm size for all farms, including data cleaning and editing.

c. Commodity specialization

The farm’s total value of agricultural production (composed by the crop production and the livestock production) was calculated to define the purpose of the farms’ agricultural production (see farm profile above). These computed variables can be used to define the main agricultural activity of the farm considering the share of crop and livestock production in the total value of agricultural production.

V5. Main agricultural activity of the AH

1. Crops (total value of crop production/total value of agricultural production ≥ 66.7 percent)
2. Livestock (total value of livestock production/total value of agricultural production ≥ 66.7 percent)
3. Mixed (all other cases)

In the long term, the calculation of the share of crop output and livestock output based on the total output of the farm’s economic size will be used.

Because fishery and aquaculture are considered agricultural activity, farms having no agricultural activities other than fishery or aquaculture may be identified as a separate class.
d. Farm diversification and pluriactivity of the holder

Currently, no data in the PHS can be used to classify farms based on the importance of the time spent working on the holding by the holder and the holder’s family, and on the presence and importance of other economic activities. In future surveys, the collection of the following data could be considered:

- V6. Presence of other economic activities on the farm
- V7. Share of holding’s agricultural production in total farm income
- Importance of the time spent working on the agricultural holding by the holder and the holder’s family

A module survey such as RALS can be used to collect this data for small and medium farms. The PHS administered large farms could collect this data on annual basis.

5. Definition of farm types and distribution of agricultural holdings by farm type

The crossing of the dimensions will yield the farm types. In total, there would be 36 possible farm types (four farm profiles x three farm size classes x three commodity specialization classes). Aggregation of non-significant classes may be done to reduce the number of farm types, and particular attention could be paid to small-scale farms, which are of higher policy interest. Based on the classification variables, a new variable representing the farm type can be derived. It could be represented as a string variable with a number and sequence of digits corresponding to the typology dimensions. In the example given below, the first digit corresponds to the farm profile, the second to the farm size and the third to the commodity specialization. The number itself corresponds to the dimension class.

Available farm statistics may be presented by farm type. After analysing the PHS 2015 data sets for small-, medium- and large-scale farms, at least the following data could be shown:

- number of farms;
- total and average agricultural area;
- total and average number of livestock per type (cattle, sheep, goats, pigs, poultry); and
- total and average value of agricultural production.
### TABLE A4.19. NUMBER OF AGRICULTURAL HOLDINGS BY FARM TYPE.

<table>
<thead>
<tr>
<th>Farm size</th>
<th>Commodity specialization</th>
<th>Purpose of agricultural production</th>
</tr>
</thead>
<tbody>
<tr>
<td>All holdings</td>
<td>Crops</td>
<td>41.99%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Livestock</td>
<td>20.51%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed</td>
<td>0.97%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small farms</td>
<td>Crops</td>
<td>11.16%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Livestock</td>
<td>24.89%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed</td>
<td>0.24%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium farms</td>
<td>Crops</td>
<td>0.05%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Livestock</td>
<td>0.11%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed</td>
<td>0.06%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Big farms</td>
<td>Crops</td>
<td>0.05%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Livestock</td>
<td>0.11%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed</td>
<td>0.06%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: PHS 2015, CSO, Zambia.

### TABLE A4.20. CHARACTERISTICS OF THE HEAD OF AGRICULTURAL HOLDINGS BY FARM TYPE.

<table>
<thead>
<tr>
<th>Farm size</th>
<th>Commodity specialization</th>
<th>Head of the agricultural holdings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>share of men</td>
</tr>
<tr>
<td>Small farms</td>
<td>mainly crop activities</td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>mainly livestock activities</td>
<td>78%</td>
</tr>
<tr>
<td></td>
<td>mixed crop and livestock activities</td>
<td>67%</td>
</tr>
<tr>
<td>Medium farms</td>
<td>mainly crop activities</td>
<td>82%</td>
</tr>
<tr>
<td></td>
<td>mainly livestock activities</td>
<td>89%</td>
</tr>
<tr>
<td></td>
<td>mixed crop and livestock activities</td>
<td>93%</td>
</tr>
<tr>
<td>Big farms</td>
<td>mainly crop activities</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>mainly livestock activities</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>mixed crop and livestock activities</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: PHS 2015, CSO, Zambia.
6. Conclusions of the desk study

The FT methodology is an interesting way of presenting the PHS results, and the CSO Zambia plan is to present it to senior management in the ministries so that they may appreciate with the full potential of our PHS data. This will definitely contribute towards their planning of government programmes.

During the interactions between CSO Zambia and the GSARS consultant, several calculations needed for the definition of the FT were explained and applied in practice. With the kind of data sets available in Zambia, implementation of the FT analysis in future is certainly feasible. The data sets for the PHS especially proved to be the most amenable for the FT methodology. For the next review, additional questions will be incorporated into the PHS questionnaire that will enable analysis from an FT perspective. Questions that have been removed from the PHS questionnaire but have proven useful for the FT methodology will be restored, and relevant questions asked in other important surveys (such as RALS) will be incorporated in the PHS questionnaire. The LCMS is another useful source of data for the FT methodology, as it covers both the small- and large-scale farm sectors of agriculture.

During finalization of the draft Guidelines, it was proposed that suggestions for possible proxies for missing data and more examples of calculations or derivations of FT variables would be useful. This has been taken into account in the final version of the Guidelines.

This case study has proven that it would be highly feasible to implement the FT methodology, and that it would be highly useful to policy-makers in the country.
DESK STUDY ON FARM TYPOLOGY IN AZERBAIJAN

1. Introduction

The desk study in Azerbaijan was undertaken by the Agricultural Research Centre (ARC) of the Ministry of Agriculture of Azerbaijan with the assistance of GSARS.

Two main data sources were analysed for the purposes of the desk study on FT in Azerbaijan. The agricultural census carried out in 2015 by the State Statistical Committee (SSC) covers all units engaging in some agricultural activity regardless of size or legal status. Over 1.3 million units are enumerated during the census. As individual data from agricultural censuses are protected by statistical confidentiality rules, the agricultural census questionnaire and methodology are used for the FT desk study. The Farm Data Monitoring System (FDMS) is an annual economic survey of agricultural holdings that have applied for subsidies overseen by the ARC. The survey covers approximately 3,500 agricultural holdings.

The definitions of FT dimensions and classification variables were tested on both the agricultural census and the FDMS. The individual data from the FDMS were used to demonstrate the classification of farms. The results should be seen as a test for the implementation of the FT in the future, rather than as a representative distribution of farms by farm types.

2. Methodological framework of FT in Azerbaijan

a. Scope

In the agricultural census, the definition of the agricultural holding comprises “all entities (collective (joint) farms, companies, agricultural production cooperatives, enterprises, households, family peasant farms, and private entrepreneur farms) engaged in the production of agricultural products”.
### TABLE A4.21. DEFINITION OF UNITS.

<table>
<thead>
<tr>
<th>Unit name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The first group</strong></td>
<td></td>
</tr>
<tr>
<td>1. Collective farms</td>
<td>Established with contributions by the founders, as well as property produced or achieved by the activities of the farm, being collective (shared) property of founders (participants), divided into shared charter capital.</td>
</tr>
<tr>
<td>2. Open joint-stock company</td>
<td>Companies that are able to provide open subscription to output stocks and may engage in their free sale, and that can expropriate the owned stocks without the consent of the other stockholders.</td>
</tr>
<tr>
<td>3. Closed joint-stock company</td>
<td>Companies that do not have the right to provide open subscription to output stocks and to engage in their free sale, and stocks are expanded only among the founders or other persons defined in advance.</td>
</tr>
<tr>
<td>4. Limited liability company</td>
<td>Company founded by one or more physical and (or) legal entities, the charter of which is shared in a quantity defined in advance according to charter. Participants of limited liability companies are not responsible for its obligations and take a risk relating to society activity that is limited to the amount invested for losses.</td>
</tr>
<tr>
<td>5. Company with additional responsibility</td>
<td>Company founded by one or more persons, the charter capital of which is shared in a quantity defined in advance according to its charter. The participants of such a company are responsible for subsidies and properties in an equal amount, defined according to the company charter.</td>
</tr>
<tr>
<td>6. Agricultural production cooperative</td>
<td>Unit based on membership for the joint activity of physical entities and organizations founded by combining participant’s rights-of-property share. State pedigree farms, seed farms, sort-piled and educational experiments farms, subsidiary state agricultures and other state farms refer to state farms.</td>
</tr>
<tr>
<td>7. State-owned farms (enterprises)</td>
<td>The state-owned shares are equal to or more than two-thirds of the property; they may be directly or indirectly state-owned with legal entity status (breeding, seed production, seed-testing, training farms, etc.).</td>
</tr>
<tr>
<td><strong>The second group</strong></td>
<td></td>
</tr>
<tr>
<td>1. Households (summer house farms)</td>
<td>A group of people living together in a house (apartment) and having a common economy, namely their personal budgets, connecting totally or partially.</td>
</tr>
<tr>
<td>2. Family peasant farms</td>
<td>Joint realization and other activities (product output, processing, storage, transportation and sale of agricultural products) in rural areas without formation of a legal entity, based on the private labour of family members and persons together with them, and leased or own property.</td>
</tr>
<tr>
<td>3. Private entrepreneur farms</td>
<td>Natural persons engaged in entrepreneurial activities without establishing a legal entity.</td>
</tr>
</tbody>
</table>
b. List of agricultural activities

### TABLE A4.22. LIST OF ACTIVITIES.

<table>
<thead>
<tr>
<th>Type of activities</th>
<th>Detailed activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural activities</td>
<td>• crop growing</td>
</tr>
<tr>
<td></td>
<td>• animal breeding</td>
</tr>
<tr>
<td>Non-agricultural farm activities</td>
<td>• agriculture services including renting of farm equipment</td>
</tr>
<tr>
<td></td>
<td>• hunting and fishing</td>
</tr>
<tr>
<td></td>
<td>• processing of agricultural products</td>
</tr>
<tr>
<td></td>
<td>• tourism</td>
</tr>
<tr>
<td></td>
<td>• craftsmanship</td>
</tr>
<tr>
<td></td>
<td>• commercial activities</td>
</tr>
<tr>
<td></td>
<td>• other activities</td>
</tr>
<tr>
<td>Off-farm activities (other sources of income)</td>
<td>• employment (salaried)</td>
</tr>
<tr>
<td></td>
<td>• pension</td>
</tr>
<tr>
<td></td>
<td>• social assistance payments</td>
</tr>
<tr>
<td></td>
<td>• money transfers</td>
</tr>
<tr>
<td></td>
<td>• other activities</td>
</tr>
</tbody>
</table>

c. Description and definition of the regions

The last agricultural census covers the Nakchivan Autonomous Republic, the city of Baku and eight economic regions, encompassing overall nine cities and 62 regions (as known as rayons).

Data on agricultural area, number of livestock, crops and animal production are generally produced and disseminated at the regional level.
### 3. Sources of data for classification variables and missing data

**TABLE A4.23. LIST OF CLASSIFICATION VARIABLES, SOURCES OF EXISTING DATA AND MISSING DATA IDENTIFIED.**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Classification variables</th>
<th>Items needed</th>
<th>Level</th>
<th>Sources OR Missing data</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm profile</td>
<td>V1. Legal status of the agricultural holder</td>
<td>Legal status of the holder AND/OR Legal status of the holding</td>
<td>Individual (agricultural holding)</td>
<td>Agricultural census 2015</td>
<td>1.3 million entities</td>
</tr>
<tr>
<td></td>
<td>V2. Purpose of the agricultural production</td>
<td>What is the main purpose of production of the holding (for sale or home consumption) as per farmer declaration OR • Total annual value of agricultural production • Annual value of sales • Annual value of own consumption</td>
<td>Individual (agricultural holding)</td>
<td>FDMS 2015–2017</td>
<td>Apprx. 3 500 entities</td>
</tr>
<tr>
<td>Dimension</td>
<td>Classification variables</td>
<td>Items needed</td>
<td>Level</td>
<td>Sources OR Missing data</td>
<td>Notes</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------</td>
<td>--------------</td>
<td>-------</td>
<td>-------------------------</td>
<td>-------</td>
</tr>
<tr>
<td><strong>V3. AAU of the holding</strong></td>
<td>• Total AAU of the holding</td>
<td>Individual (agricultural holding)</td>
<td>Agricultural census 2015 FDMS 2015–2017</td>
<td>• Sown area • Fallow lands • Unused lands • Perennial crops • Pastures • Haymaking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cultivated area by crop</td>
<td></td>
<td>Agricultural census 2015 FDMS 2015–2017</td>
<td>List of crops covered: • All grown crops</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Number of animals present, slaughtered on the farm and sold</td>
<td>Aggregated at national or lower regional level</td>
<td>Agricultural Census 2015 FDMS 2015-2017</td>
<td>List of livestock types and animal production covered: • Sheep and goats • Cows and water buffalos • Pigs • Horses • Camels • Donkeys and mules • Poultry (hens and cocks) • bees • fish</td>
<td></td>
</tr>
<tr>
<td><strong>V4. Economic size of the holding</strong></td>
<td>• Physical quantities produced of vegetal and animal production</td>
<td></td>
<td>Agricultural census 2015 FDMS 2015–2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Yield of crops</td>
<td></td>
<td>Agricultural census 2015 FDMS 2015–2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Prices at farm gate • Market price</td>
<td></td>
<td>Agricultural census 2015 FDMS 2015–2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Technical information: fertility, mortality, length of production cycle, etc.</td>
<td></td>
<td>State Statistical Committee Ministry of Agriculture</td>
<td>List of technical coefficients covered: N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Area of crops • Number of scattered trees • Number of livestock per type</td>
<td>Individual (agricultural holding)</td>
<td>Agricultural census 2015 FDMS 2015–2017</td>
<td>• Number of scattered trees only at backyards</td>
<td></td>
</tr>
<tr>
<td><strong>V4. Economic size of the holding (measure by farm annual revenue – optional)</strong></td>
<td>• Annual farm revenue (optional) annual farm revenue broken down as follows: • from crop production • from livestock production in addition: • revenue from forestry • revenue from fisheries</td>
<td>Individual (agricultural holding)</td>
<td>FDMS 2015–2017</td>
<td>Revenue from forestry and fisheries are not available</td>
<td></td>
</tr>
</tbody>
</table>
Pluriactivity of the holder and holder’s family can be defined by the “Importance of the time spent working on the agricultural holding by the holder and holder’s family” variable. The test conducted during the desk study showed, however, that this information is currently not collected.

### TABLE A4.24. DATA SOURCES QUALITY ASSESSMENT FOR THE PURPOSES OF THE FT.

<table>
<thead>
<tr>
<th>Name of the source</th>
<th>Owner of the source</th>
<th>Unit of observation</th>
<th>Coverage of the units</th>
<th>Coverage of the agricultural activities</th>
<th>Last year of reference of available data</th>
<th>Frequency (monthly, annually, etc.)</th>
<th>FT items concerned and level of aggregation</th>
<th>Quality issues and other notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural census</td>
<td>State Statistical Committee of AR</td>
<td>1 352 121</td>
<td>1 352 121</td>
<td>All agricultural activities</td>
<td>2015</td>
<td>Every ten years</td>
<td>V1, V3, V6, V7</td>
<td>Structural data for V4 is available.</td>
</tr>
<tr>
<td>FDMS</td>
<td>ARC under MoA</td>
<td>Approx. 3 500</td>
<td>Approx. 400 000</td>
<td>Crop growing, animal breeding, sales, consumption, costs structure, income, etc.</td>
<td>2017</td>
<td>Annually</td>
<td>V1, V2, V3, V4, V7</td>
<td>V5 can be derived from V4; Sample database based on subsidy receiver’s database; therefore, it does not represent the entire population of agricultural holdings.</td>
</tr>
</tbody>
</table>
4. Definition of the FT dimensions and classification variables

Once all classification variables for which data are available are calculated for each agricultural holding, classification can be done applying the combination of dimensions. Some farm types, classes or dimensions may be not significant for the country and aggregation may thus be proposed.

Pursuant to an analysis of the data available in the FDMS and the agricultural census, the following variables are proposed for testing FT determination in Azerbaijan:

a. Farm profile

V1. Legal status of agricultural holder
1. Civil person or group of civil persons: FDMS, AC
2. Juridical person: FDMS, AC

V2. Purpose of agricultural production
1. Producing mainly for own consumption (total value of sales/total agricultural income < 50 percent)
2. Producing mainly for sale (total value of sales/total agricultural income ≥ 50 percent)

This variable can be calculated using FDMS data (total agricultural income and total agricultural sales). The agricultural census (household questionnaire) contains a separate question for identifying the destination of the agricultural products.

The crossing of the two variables gives the four classes of the farm profile:
1. physical persons producing mainly for own consumption;
2. physical persons producing mainly for sale;
3. juridical persons producing mainly for own consumption; and
4. juridical persons producing mainly for sale.

TABLE A4.25. DISTRIBUTION OF AGRICULTURAL HOLDINGS BY FARM PROFILE.

<table>
<thead>
<tr>
<th>Farm profile</th>
<th>Share of farms (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal persons, producing mainly for home consumption</td>
<td>15.2</td>
</tr>
<tr>
<td>Legal persons, producing mainly for sale</td>
<td>84.8</td>
</tr>
<tr>
<td>Physical person, producing mainly for home consumption</td>
<td>21.8</td>
</tr>
<tr>
<td>Physical persons, producing mainly for sale</td>
<td>78.2</td>
</tr>
</tbody>
</table>

Source: FDMS, Agricultural Research Centre of the Ministry of Agriculture of Azerbaijan.
b. Farm size

V3. AAU of the AH
This variable can be calculated using both sources (FDMS and AC):
• the FDMS uses special classification (five classes);
• the AC classification is excessively detailed (16 classes), but can be aggregated.

V4. Economic size of the holding (measured by the agricultural holding’s total agricultural output)
The calculation of total agricultural income from the FDMS was used to demonstrate farm economic size classes.
The agricultural census does not collect economic data; therefore, to identify the economic size it is necessary to calculate average output per hectare and head of animals. Then, this should be applied to individual data relating to the crop land and animal number of each farm in the agricultural census.

<table>
<thead>
<tr>
<th>Land groups</th>
<th>Share of farms per ha, %</th>
<th>Share of farms per income, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;2.17</td>
<td>27.8</td>
<td>16.5</td>
</tr>
<tr>
<td>2.17-3.77</td>
<td>21.8</td>
<td>11.4</td>
</tr>
<tr>
<td>3.77-7.29</td>
<td>18.0</td>
<td>8.1</td>
</tr>
<tr>
<td>7.29-37.7</td>
<td>11.8</td>
<td>9.3</td>
</tr>
<tr>
<td>37.7&lt;</td>
<td>20.7</td>
<td>54.7</td>
</tr>
</tbody>
</table>

Source: FDMS, Agricultural Research Centre of the Ministry of Agriculture of Azerbaijan.
c. Commodity specialization

The farm total agricultural income (composed by the crop income and the livestock income) was calculated for the purposes of defining the farms’ market integration (see farm profile above) and farm economic size. These computed variables can be used to define the main agricultural activity of the farm considering the share of crop and livestock production in the total agricultural income.

V5. Main agricultural activity of the agricultural holding
1. Crops (crop income/total agricultural income ≥ 66.7 percent)
2. Livestock (livestock income/total agricultural income ≥ 66.7 percent)
3. Mixed (all other cases).

In the medium term, the calculation of the share of crop output and livestock output based on the total output of the farm’s economic size will be used.

This variable is derived from the economic size variable. If the crop production is equal to or more than two-thirds of total agricultural income, then it is crop-oriented; the inverse is also true. If these requirements are not met, then it is a mixed farm.

**TABLE A4.27. DISTRIBUTION OF AGRICULTURAL HOLDINGS PER COMMODITY SPECIALIZATION**

<table>
<thead>
<tr>
<th>Commodity specialization</th>
<th>Share of farms, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainly crop production</td>
<td>59.2</td>
</tr>
<tr>
<td>Mainly livestock production</td>
<td>15.5</td>
</tr>
<tr>
<td>Mixed</td>
<td>25.3</td>
</tr>
</tbody>
</table>

Source: FDMS, Agricultural Research Centre of the Ministry of Agriculture of Azerbaijan.
d. Farm diversification

V7. Share of holding’s agricultural production in total farm income
This variable can be calculated using both FDMS and agricultural census data.

### TABLE A4.28. DISTRIBUTION OF AGRICULTURAL HOLDINGS BY DIVERSIFICATION.

<table>
<thead>
<tr>
<th>diversification groups*</th>
<th>Legal status</th>
<th>Share of farms by the level of diversification, %**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not diversified</td>
<td>Physical person</td>
<td>84.3</td>
</tr>
<tr>
<td>Less diversified</td>
<td></td>
<td>8.0</td>
</tr>
<tr>
<td>Moderately diversified</td>
<td></td>
<td>4.8</td>
</tr>
<tr>
<td>Very diversified</td>
<td></td>
<td>2.9</td>
</tr>
<tr>
<td>Not diversified</td>
<td>Legal person</td>
<td>98.2</td>
</tr>
<tr>
<td>Less diversified</td>
<td></td>
<td>0.0</td>
</tr>
<tr>
<td>Moderately diversified</td>
<td></td>
<td>1.8</td>
</tr>
<tr>
<td>Very diversified</td>
<td></td>
<td>0.0</td>
</tr>
</tbody>
</table>

Source: FDMS, Agricultural Research Centre of the Ministry of Agriculture of Azerbaijan.

* WCA 2020, item 0109
** in the number of farms per legal status

The diversification groups can be aggregated to two classes: not diversified and diversified. Diversified farms would cover the less, moderate and very diversified farms.
5. Definition of farm types and distribution of agricultural holdings per farm type

The crossing of the dimensions will give the farm types. In total, there would be 90 possible farm types (three farm profiles x five farm size classes x three commodity specialization classes x two diversification classes). For the test, the farm diversification variable was not calculated; therefore, the total number of possible farm types is 45. The table below shows the share of farms per farm type, using three dimensions and more aggregated classes for farm profile and farm size.

### TABLE A4.29. DISTRIBUTION OF AGRICULTURAL HOLDINGS PER FARM TYPE.

<table>
<thead>
<tr>
<th>Farm size</th>
<th>Farm profile</th>
<th>Products specialization</th>
<th>Share of the farms, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small farms</td>
<td>Mainly for home consumption</td>
<td>Mainly crop production</td>
<td>48.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mainly livestock production</td>
<td>16.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixed farms</td>
<td>34.6</td>
</tr>
<tr>
<td></td>
<td>Mainly for sale</td>
<td>Mainly crop production</td>
<td>81.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mainly livestock production</td>
<td>6.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixed farms</td>
<td>12.0</td>
</tr>
<tr>
<td>Medium farms</td>
<td>Mainly for home consumption</td>
<td>Mainly crop production</td>
<td>32.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mainly livestock production</td>
<td>24.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixed farms</td>
<td>43.3</td>
</tr>
<tr>
<td></td>
<td>Mainly for sale</td>
<td>Mainly crop production</td>
<td>57.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mainly livestock production</td>
<td>21.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixed farms</td>
<td>21.6</td>
</tr>
<tr>
<td>Large farms</td>
<td>Mainly for home consumption</td>
<td>Mainly crop production</td>
<td>59.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mainly livestock production</td>
<td>24.6</td>
</tr>
<tr>
<td></td>
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<td>Mixed farms</td>
<td>15.8</td>
</tr>
<tr>
<td></td>
<td>Mainly for sale</td>
<td>Mainly crop production</td>
<td>60.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mainly livestock production</td>
<td>20.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixed farms</td>
<td>18.9</td>
</tr>
</tbody>
</table>

Source: FDMS, Agricultural Research Centre of the Ministry of Agriculture of Azerbaijan.

The farm statistics available may be presented by farm type. After analysing the FDMS 2016 data, at least the following data could be presented:
- number of farms;
- average agricultural area;
- average agricultural income;
- average agricultural sales;
- average income from other activities;
- average total farm income;
- average number of employees;
- average cost per farm (crop and livestock); and
6. Conclusions, issues for discussion and recommendations for the FT Guidelines

Azerbaijan could define the FT based on the 2015 agricultural census and the FDMS using all four dimensions: farm profile, farm size based on agricultural area and economic size, commodity specialization and diversification, as they are established in these Guidelines.

The key stakeholders must be more involved in the definition of farm typology, in particular for the implementation of FT with regard to the AC 2015 data, which will enable the FDMS sample to be based on the 2015 as the sampling frame.

There is already a good level of coherence between the agricultural census and the FDMS. However, it is necessary to ensure further coherence between SSC data sources and the FDMS in the future, in particular by:

• harmonization of definitions of agricultural holdings and farms;
• identification of farmers by introduction of farm IDs or holder IDs; and
• harmonization of main crop and livestock variables.
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- Laura Monopoli

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