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**DEFINING SMALL SCALE  
FOOD PRODUCERS TO  
MONITOR TARGET 2.3.  
OF THE 2030 AGENDA FOR  
SUSTAINABLE DEVELOPMENT**

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## **DEFINING SMALL-SCALE FOOD PRODUCERS TO MONITOR TARGET 2.3. OF THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT**

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## DEFINING SMALL-SCALE FOOD PRODUCERS TO MONITOR TARGET 2.3. OF THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

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### Abstract

Despite the central position occupied by smallholder<sup>1</sup> agriculture in the current development debate, a general and operational definition of small-scale food producers still does not exist. The question “what is a small scale producer?” keeps receiving different answers depending on the context in which is posed. Alternative ways of defining smallholders reflect heterogeneous historical, institutional, eco-systemic contexts and depend upon what is the role of small-scale agriculture in the rural economy. A harmonized and unique definition of smallholder agriculture still needs to be established and operationalized. This has become a pressing issue given the need to monitor the Sustainable Development Goals (SDGs), which refers to the concept of smallholder in indicators 2.3.1 and 2.3.2.

Within this context, this present paper reviews different approaches adopted in the literature to define small-scale food producers, and highlights pros and cons associated with each alternative. It identifies criteria to be considered in a harmonized definition of this concept and reflects on the difference between absolute and relative approaches. Given the absence of a one-size-fits-all solution, the “right” definition will likely depend on the particular purposes of the analysis and the trade-off between completeness and feasibility.

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<sup>1</sup> In this paper, we use the terms “smallholder” and “small scale farmers” interchangeably. However, we are aware that there is a difference between the two, as “smallholder” refers more to tenure, while “small-scale producer” or farmer refers more directly to production levels. Despite this nuance, we prefer to use the two as synonyms, as we believe that they factually point to very similar entities.

## 1. Introduction

In September 2015, the 2030 Agenda for Sustainable Development was unanimously adopted by the 193 Member States of the United Nations. The Agenda, which includes 17 goals and 169 targets, is expected to guide policies and programmes of policy-makers, the civil society, the private sector and other relevant stakeholders in the next 15 years and beyond.

In March 2016, the UN Statistical Commission agreed on a list of 230 global indicators to track progress against the 169 SDG targets. FAO's strategic framework is closely aligned with the SDGs, and the Organization has been proposed as custodian for 21 SDG indicators. As a custodian agency, FAO will work towards ensuring that data collected at national level are comparable and aggregated at sub regional, regional and global levels. The organization will be responsible for collecting data from national sources, validating and harmonizing them, estimating regional and global aggregates and publishing them on FAOSTAT. The data will inform the annual SDG progress reports that feed into the High Level Political Forum's follow-up and review processes.

Among the 21 FAO-relevant SDG indicators, two are associated with target 2.3. This target envisages, in particular, 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."

Indicators 2.3.1<sup>2</sup> and 2.3.2<sup>3</sup>, which measure labour productivity and income of smallholders, are classified in Tier III, among those indicators for which an agreed methodology is not yet developed. The main reason for this classification is the lack of a universally-accepted international definition of "smallholder". Indeed, despite the central position occupied in the debate on agricultural transformation and rural poverty, available definitions of "smallholder" vary significantly, depending on the farm characteristics taken into account, ranging from socio-economic features, to resource endowments and agro-ecological dimensions. The term "smallholder" often overlaps and may be used interchangeably with "small-scale agriculture", "family farm", "subsistence farm", "resource-poor farm", "low-income farm", "low-input farm" or "low-technology farm" (Heidhues and Brüntrup 2003).

This paper reviews criteria and approaches adopted to define smallholders in agriculture. It highlights pros and cons associated with each alternative measure. In particular, we reviewed definitions used at national and international level in roughly 60 papers or websites, in view of laying the ground to operationalize the "small scale food producers" concept embedded in SDG indicators 2.3.1 and 2.3.2.

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<sup>2</sup> 2.3.1 Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size

<sup>3</sup> 2.3.2 Average income of small-scale food producers, by sex and indigenous status

The thread along which all the review is developed is the idea that, given the absence of one-size-fits-all solution, the “right” definition always depends on the specific purpose that it addresses. Moreover, the choice of the key definitional criteria will be informed by existing trade-offs between completeness and feasibility, and the limitations posed by data availability. Most definitions reviewed are reported in a glossary presented under Annex A.

This paper discusses the existing options and propose a feasible approach for establishing an international definition of smallholders, with the objective of monitoring SDG indicators 2.3.1 and 2.3.2. We also consider the merits of absolute and relative approaches, where the term “relative” refers to definitions that classify smallholders with reference to the area or the country in which (s)he operates. It is important to highlight that any internationally agreed definition is not intended to replace country-specific definitions which are meant to reflect national policy priorities.

## **2. The challenge of defining smallholder agriculture**

While the Monitoring Framework of the SDGs refers to the concept of small scale “food producers”, most of the literature refers to small farms. Farmers are in fact a sub-set of food producers, as they constitute the first part of a production chain that may include traders, processors, retailers and other agents depending of the specific product and context. They seem to be, however, the main target of SDG2. For this reason, indicators 2.3.1 and 2.3.2 must be operationalized first and foremost with reference to agricultural producers.

The concept of “smallholder farmer” can be approached from various perspectives, which are linked to the objective of the analysis. From a general standpoint, smallholders are farmers operating under structural constraints such as access to sub-optimal amounts of resources, technology and markets. Dixon et al. (2004) summarize this idea when they say that “the term smallholders refers to the limited resource endowment of farmers compared to those of other farmers in the sector”. In the same vein, Brooks et al (2009) define smallholders as “farm households which struggle to be competitive, either because their endowments of assets compare unfavourably with those of more efficient producers in the economy or because they confront missing or under-developed markets”. Similarly, in Murphy (2010), smallholder farmers are “..characterized by marginalization, in terms of accessibility, resources, information, technology, capital and assets...”. Finally, according to the World Bank Rural Development Strategy (2003) smallholdings are those farms “*with a low asset base and operating in less than 2 hectares of cropland*”.

A more articulated and comprehensive definition is presented in the Report of the High Level panel of Experts on Food Security and Nutrition according (CFS HLPE, 2013) to which a small farm is

*“..an agricultural holding run by a family using mostly (or only) their own labour and deriving from that work a large but variable share of its income, in kind or in cash. The family relies on its agricultural activities for at least part of the food consumed – be it through self-provision, non-monetary exchanges or market exchanges. The family members also engage in activities other than farming, locally or through migration. The holding relies on family labour with limited reliance on temporary hired labour, but may be engaged in labour exchanges within the neighbourhood or a wider kinship framework”.*

As stated by Nagayets (2005), one of the reasons why the sole consensus around the concept of small farms may be the lack of an agreed definition, is the wide variety of farm structure and characteristics across different contexts and geographical areas<sup>4</sup>. Much literature mentions the absence of such agreement, but few papers venture proposing definitions. One is the EU Agricultural Economic Brief of 2011 entitled “What is a small farm?”.

Additional reports and literature reviews that offered useful entry points for our research are those produced in the framework of the World Agricultural Watch (WAW) initiative (see, for example, Even and Saravia-Matus, 2014; Even et. al. , 2016; Saravia-Matus et. al. 2013). Although not directly focused on the definition of smallholders, the WAW worked towards elaborating an international typology of agricultural holdings and is preparing country level guidelines for the identification of farm typologies. These harmonized groups are used to monitor rural transformation and to support policy dialogue.

In the policy debate, the notion of “small farms” goes hand in hand with the idea of disadvantage, risk of poverty, lack of opportunities, and need of support (EU Agricultural Economic Briefs, 2011). Hence an ideal definition should be consistent with the concepts of absolute poverty and severe food insecurity, which are at the basis of the SDGs policy agenda. At the same time, an operational definition needs to balance completeness, relevance and practical feasibility; and must be based on a criterion that does not depend upon the outcomes that have to be measured (Offutt, 2016). For SDG indicator 2.3.1 and 2.3.2, this means that the criterion chosen to identify smallholders must be independent from the income and labour productivity of food producers. We propose three logical steps to be followed in the identification of an operational definition of smallholder farmers.

- 1) First, a criterion that characterize smallholders must be chosen. This variable can be, for instance, land, labour, market orientation, etc.;
- 2) Second, data availability for the implementation of the selected criterion must be assessed;
- 3) Third, a decision needs to be taken of whether the criterion should be considered in absolute or relative terms;

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<sup>4</sup> See the IFC’s Handbook (2012) for a brief review of the main elements characterizing smallholders’ agriculture.

4) Finally, a threshold to separate smallholders from other type of farms must be identified.

One additional consideration is in order. Target 2.3 (and the related indicators), as defined in the 2030 Agenda for Sustainable Development, refers to small-scale food producers. This means that reference is made to the holders of an enterprise, and not to the holding. The two concepts are different. Most of the literature refers to the holding rather than to the holder. In this paper we consider the farm as a proxy to capture some key characteristics of its holder, presenting criteria to identify small-farms.

While the most common and feasible approach is to identify a holding, it must be noted that, by introducing this approximation, we assume that the income and productivity due to be doubled by 2030 are those of the farm activity. Other income sources – such as non-agricultural economic activities in which the holder may be engaged – will not be considered. Furthermore, referring to the holding, we do not account for those cases in which a holder owns or operates more than one farm. Finally, as mentioned, we do not consider here small-scale firms involved in the processing of agricultural products, which would be part of the “food producers”.

An important pre-requisite for defining smallholders, is the availability of a workable and agreed concept of what is a farm, and what is a farmer. While this is not the topic of this paper, agricultural censuses and surveys worldwide are not always based on similar definitions. FAO defines an agricultural holding as “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” (FAO, 2015c). FAO encourages countries to develop their national statistical definition on the basis of this standard concept. Nevertheless, most countries still adopt thresholds of farm size, below which farms are not included in the reference population. Lack of homogeneity on these choices may hinder inter-country comparisons, even if a unique criterion is used to identify smallholders.

It is also important to notice that the focus of this paper is on small-scale producers engaged in crop and livestock activities. Issues related to the identification of small-scale producers in fishery, aquaculture and forestry are very specific to those sub-sectors, and require a separate discussion. The definition of small-scale fisheries has been subject to a wide debate extensive consultation and negotiation on the occasion of the formulation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries, endorsed by The Committee on Fisheries (COFI) in 2015. These guidelines include the following consideration on the definition of small-scale fisheries:

*“These Guidelines recognize the great diversity of small-scale fisheries and **that there is no single, agreed definition of the subsector.** Accordingly, the Guidelines do not prescribe*

*a standard definition of small-scale fisheries nor do they prescribe how the Guidelines should be applied in a national context. These Guidelines are especially relevant to subsistence small-scale fisheries and vulnerable fisheries people. To ensure transparency and accountability in the application of the Guidelines, it is important to ascertain which activities and operators are considered small-scale, and to identify vulnerable and marginalized groups needing greater attention. This should be undertaken at a regional, sub regional or national level and according to the particular context in which they are to be applied. States should ensure that such identification and application are guided by meaningful and substantive participatory, consultative, multilevel and objective-oriented processes so that the voices of both men and women are heard. All parties should support and participate, as appropriate and relevant, in such processes.”*

Fishery and aquaculture are important sources of food, nutrition, income and livelihoods for hundreds of millions of people around the world. Therefore, a strategy to include small-scale food producers in this sub-sectors in the monitoring of target 2.3 must still be further explored. Opportunities, In this respect, could be found in the context of the monitoring of SDG14, which is specific to fisheries, and will require expertise on the organization of production<sup>5</sup>.

Finally, it is worth noticing that in reviewing the definitions proposed, a number of potential overlaps emerged with concepts which are somehow related to that of smallholder, albeit inherently different. Examples include family farmers and subsistence farming, peasants, outgrowers.

### **3. A catalogue of definitions by type**

A broad categorization of the definition of smallholders emerges by distinguishing those based on a single criterion from those based on multiple criteria. The former are more frequently used to identify smallholders in a given population, and to produce statistics. The latter are more frequently used in theoretical work and in the policy debate.

The definitions based on a single criterion can be grouped in the four categories below, depending on the criteria on which they rely:

- 1) The endowment of factors of production such as land, labour, technology;
- 2) The type of management of the holding - notably the degree of involvement of the family;
- 3) The connection between the farm and the market (market orientation);
- 4) The economic size of the holding, measured - for instance – through the value of production.

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<sup>5</sup> In particular, a definition of small scale fisheries seems to be a pre-requisite for monitoring target 14b, on “Access to markets and marine resources for small-scale fisheries”.

Definitions based on multiple criteria are usually relying on a combination of the above mentioned criteria. The definitions derived from these criteria are analyzed in the next section, highlighting pros and cons of each of them.

### 3.1 Definitions based on the holding's endowments of production factors

This group of definitions uses the endowment of production factors such as land size, quantity of labour, or value of machineries to identify smallholders.

#### 3.1.1 Land size

Limited access to land is a very common approach to identifying smallholders. About 70% of the literature reviewed define smallholders in terms of the physical size of the farm, primarily in terms of hectares of operated land or number of tropical livestock units (Eastwood et. al., 2009). An upper limit of 2 hectares is typically identified on the land area or number of livestock operated or owned by individual farmers and their families. As summarized by Thapa (2009) *“small farms... have been defined in a variety of ways. The most common measure is farm size: many sources define small farms as those with less than 2 hectares of cropland”*.

The paper *“Hungry for land: small farmers feed the world with less than a quarter of farmland”* (GRAIN, 2014) indicates the extent to which this criterion is widespread. To find out how much land is operated by smallholder farmers and how much food they are producing, the authors collected official statistics, FAOSTAT data and other FAO sources and relied, when available, the definition used by each national statistical authority. Where national definitions were not available, they adopted the 2 ha approach. Out of 122 countries in which a definition was available, 71 adopted land size thresholds, with country-specific thresholds (Table 3.1).

**Table 1: Numbers of definitions of smallholders from national statistical authorities using the land size criterion (Source: Grain, 2014).**

	Number of countries for which the official definition was available	Number of countries using the land size criterion	Number of countries using the 1 ha threshold	Number of countries using the 2 ha threshold	Number of countries using the 5 ha threshold	Number of countries using the 10 ha threshold	Number of countries using thresholds greater than 10	Number of countries using different thresholds
Africa	31	22	3	8	5	5	0	1
Asia and the Pacific	30	23	5	9	3	0	1	5
Latin America and the Caribbean	19	18	1	3	3	1	9	1
North America	2	1	0	0	0	0	1	0
Europe	40	7	0	2	2	1	1	1
Tot	122	71	9	22	13	7	12	8

The land size approach is adopted overall by 93% of the countries with a definition of smallholders (by 83% of the countries in the Asia and Pacific region).

It is worth noting that in considering the size of a farm, reference is often made to the “operated land”, which is a measure of the amount of land effectively used by a farm or a household under different arrangements. This entity is different from the land owned by the holding, since it excludes land that is rented out, while it includes land rented in by the farm. At the same time, the “operated land” is different from the “cultivated land” as the former includes fallow land.

One reason for the popularity of this criterion in statistics and economic analysis is the relatively easy access to data: land size is often found in many national data sources, such as agricultural censuses and surveys and integrated household surveys, such as the LSMS-Integrated Surveys of Agriculture (ISA). In addition, land is independent from the outcomes to be measured on smallholders in the SDG monitoring framework, which monitors their income and productivity.

The measurement of operated land is frequent in the statistical practice, and undertaken with three main methods:

- 1) the traversing or “compass and rope” method;
- 2) the self-reported land area; and
- 3) the GPS-based land measurements.

The traversing method is considered the ‘gold standard’ of land area measurement. Being very accurate, it remains the approach of choice for specific types of data collection. However, the method is technically demanding, time consuming, and requires experienced staff. This makes it impractical for use in large-scale household surveys. Self-reported land area is among the most common approaches in agricultural and household surveys. This method is inexpensive and quick, and can be easily incorporated in a survey questionnaire. However, accuracy can be a concern. Methods based on GPS devices are gaining popularity. While being cheap and accurate, they need to be implemented by experienced enumerators who can operate GPS devices. Moreover, not all plots can always be visited by the enumerators, which may result in missing data; and the measurement of very small plots could pose challenges, hence reducing the accuracy.

Despite its many pros, the land-based criterion is not exempt from limitations. In particular, it has been argued, that similar land size can correspond to highly heterogeneous economic and social conditions, so that the amount of land in itself cannot fully characterize a smallholder. Nagayets (2005), for instance, argues that a land-based measure “*fails to properly account for the quality of resources, the types of crops grown, or disparities across regions [...]* The size-based definition also precludes analysis or comparison of institutional and market arrangements available to farmers, which play a critical role in determining their income opportunities as well as their access to key social services, such as health and

*education. Further, the size-based definition does not shed light on a farm's labour arrangements, such as relative shares of family and hired labour, which can also have substantial implications for the farm's efficiency and productivity.” In the same vein, Rapsomanikis (2015) argues that “...across countries, the distribution of farm sizes depends on a number of agroecological and demographic conditions, as well as on economic and technological factors. Two hectares in an arid region of Sub Saharan Africa do not produce as much as two hectares of good quality land in the Black Sea region. In Kenya, classifying as smallholders those farmers who farm land smaller than 2 hectares and adding them up, would nearly result in the entire arable sector. In other countries, such as Nicaragua, farms smaller than 2 hectares would be really small. The 2 hectares threshold does not provide any meaningful information for an analysis across countries.”*

Pros and cons of the land size approach are also reviewed in the Agricultural Economic Brief from the European Commission (2011), Berdegué and Fuentealba (2011), and Braun (2004). Smallholders in the European Union were identified for long time on the basis of the so-called Utilised Agricultural Area (UAA)<sup>6</sup>: small holdings were those with less than 2 or 5 ha of UAA. Despite being a workable measure, easily available in most countries, capable of providing broad indications of structural changes, the UAA is considered to be overly simple. The sole number of hectares is considered not to be enough for characterizing the specific problems faced by a small farm. In fact, the criterion fails to consider factors such as diverse requirements of cropland depending on the type of farming, land fertility, irrigation system and other key characteristics.

The land size-based criterion does not, per se, preclude the inclusion of other relevant variables in a definition where they are available and easily measured; while at a same time it can provide a an easily operational criterion where information is scarce. An option that could be considered is also the definition of qualitative parameters of land, accounting for their potential, or their use. This would reduce the difficulties of comparing hectares in very different context, making hectares of e.g. cereals different from hectares of horticultural products; and avoiding that two hectares of greenhouses are treated as equivalent to two hectares of meadows.

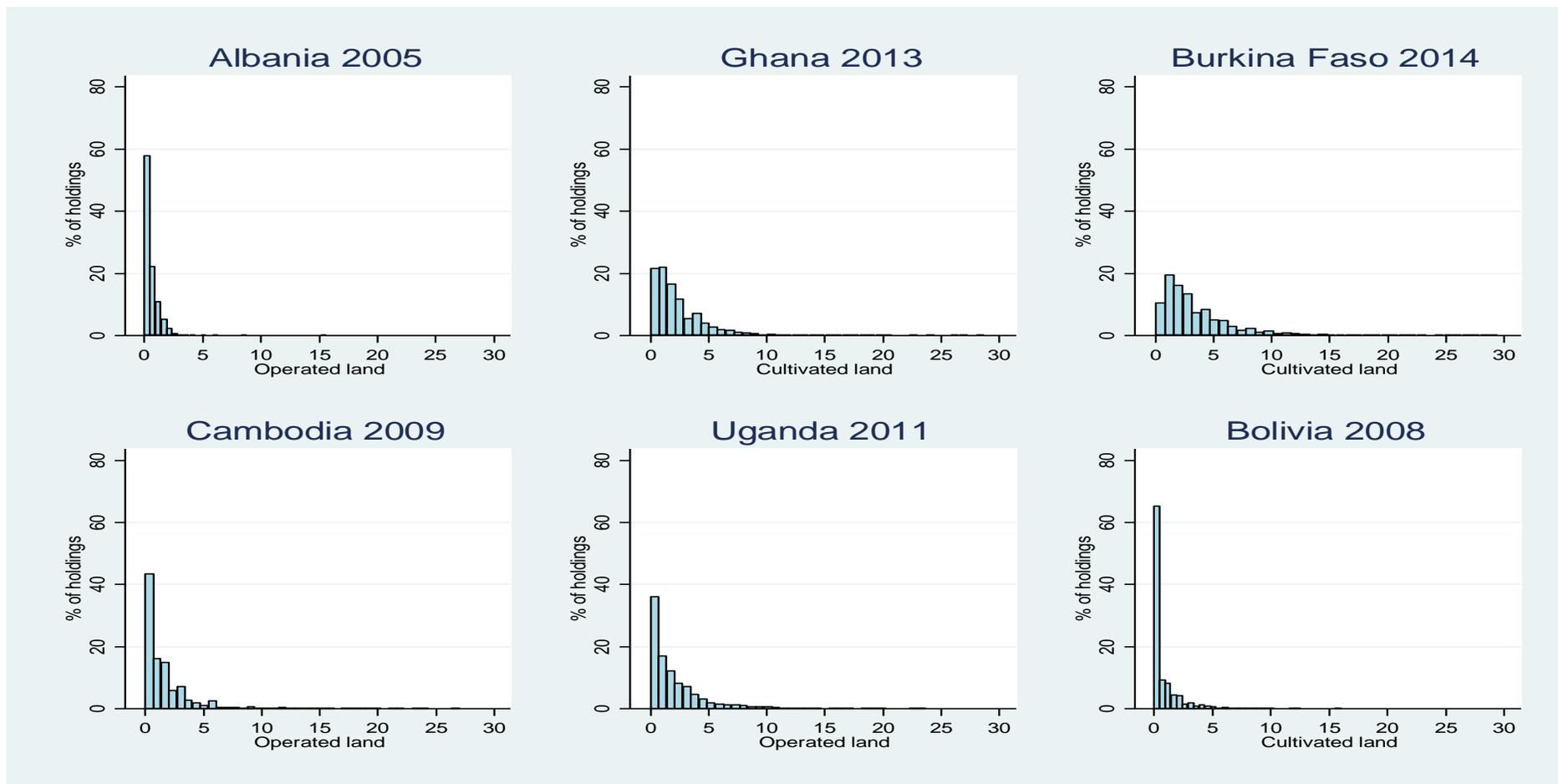
In general, the distribution of land across farmers tends to be negatively skewed, with most observations located on the left tail. This means that a limited number of farmers usually operate large-size farms, while a large number of farmers operate small-size farms. However, what changes across countries seems to be mostly the absolute position of the distribution. Few examples are reported below (**Figure 1**).For instance, while in Albania most farms operate less than 3 hectares and almost half of them operate less than 0.5

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<sup>6</sup> This criterion is being progressively replaced by another one, based on the economic size of the holding (see section 3.6)

hectares, in Burkina Faso, holdings operate on average 4 hectares, and almost 75% of the farms operate less than 5 hectares.

**Figure 1: Land size distribution in selected countries**



**Data sources:** calculations based on Albania Living Standard Measurement Survey (2005), Ghana Living Standard Survey (2012-13), Burkina Faso Enquête Multisectorielle Continue (2013-14), Cambodia Household Socio-Economic Survey (2009), The Uganda National Panel Survey (2010-11), Bolivia Encuesta de Hogares (2008). When data to compute operated land was not available, we resorted to the cultivated land, which excludes the land left fallow.

### 3.1.2 Labour

The total amount of labour input per holding can be used as a criterion for identifying small farms. The idea is that a small farm is likely to require a lower labour input compared to a large-scale one. The EU Agricultural Economic Brief on the definition of smallholders (European Commission, 2011) considers also this option for the implementation of EU common agricultural policy<sup>7</sup>. This approach shares some of the advantages and the limitations of the land size-based criteria. Moreover, given that the monitoring of SDG 2 requires the monitoring of labour productivity – indicator 2.3.2 -- information on labour inputs per farm must be collected in any case.

However, measuring labour input is not straightforward. The number of persons working in a holding would be a poor proxy for it, given the large presence of part-time, seasonal and casual labour and work in agriculture, which partly stems from the high variability of labour demand. Moreover, assessing the effective contribution of contributing family members involved in agriculture requires detailed and specific surveys (i.e. time use surveys).

One solution is the computation of an equivalent number of full time labour units associated with the farm. The EU (2011), for instance, proposes the use of annual working units (AWU). This allows considering small farms those holdings with a value of AWU lower than a given threshold. Information on the AWU, namely the number of hired and family workers and the time that they spend working in the holding, requires a detailed Farm Structure Surveys (FSS), which is carried out in EU member states every 2 or 3 years based on a common methodology.

It is important to note that, whereas the use of new technologies – such as GPS – can facilitate the collection of land data, hence reducing measurement errors, in the case of labour data there are less technical alternatives to in-depth surveys, involving long reference periods. As a matter of fact, data availability is a major challenge. Especially in developing countries, agricultural surveys are seldom performed on a regular basis, and household surveys integrated with an agricultural module only provide partial information. For example, most available household surveys do not report data for computing AWUs.

As for land size, considering labour input only, may imply that relevant socio-economic and agro-ecological characteristics of the farm are not captured. For instance, few labour units can easily operate a large-scale farms if machinery is accessible. Also in this case, therefore, the labour-based criterion should be used in combination with other criteria.

In the case of labour, however, it is also possible to consider its *type*, and not only its quantity. Several definitions are based on the type of labour. One approach is based on the idea that smallholdings rely mostly or entirely on family labour, with a small number – or no -- hired workers. Shares of family and hired labour in the holding are found in many

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<sup>7</sup> More details on EU Agriculture and Rural Development Strategy for 2014-2020 can be found at the following link: [http://ec.europa.eu/agriculture/rural-development-2014-2020/country-files/index\\_en.htm](http://ec.europa.eu/agriculture/rural-development-2014-2020/country-files/index_en.htm)

smallholder definitions, often as a complement to land size. For instance, Narayanan and Gulati (2002) define a smallholder as “..a farmer (producing crop or livestock) practicing a mix of commercial and subsistence production..., where family provides the majority of labour and the farm provides the principal source of income”. In the same vein, Hazel et. al. (2007) describe small farms as “those depending on household members for most of the labour or those with a subsistence orientation, where the primary aim of the farm is to produce the bulk of the household’s consumption of staple foods”. Lipton (2005) defines small or family farms as those “operated units that derive most of labour and enterprise from the farm family”. Also the WAW considers the type of labour used as a central criterion to define farms typologies (Even et. al., 2016).

Small farms prevalently use family labour. Examples are provided from Ethiopia, in which four members out of a family of five persons work in the farm on a daily basis. Similarly, in Bolivia, families of four provide more than two people per day to work in the holding. Non-family workers are generally hired on a seasonal basis, even though the contribution of hired labour is small. In Kenya smallholder families are reported to provide on average twenty times more labour than hired workers; and in Nicaragua the ratio of family to hired labour is over 11 (Rapsomanikis, 2015).

However, there are limitation to the use of the share of family labour for defining smallholders. Firstly, “family” farms and small farms, despite some overlap, do not coincide; and they operate considerably different shares of agricultural land on a global scale (Lowder et. al., 2014). Secondly, the degree of involvement of family members in the holding can vary to a great extent: some of them only provide marginal contributions, and data to assess these differences is not always available.

The implementation of a set of integrated farm surveys – through the Agricultural Integrated Survey (AGRIS) project – can address some of these problems. The AGRIS methodology is structured around a core module collecting data on crop and livestock production and four rotating modules. One of the rotating modules, administered once every three years, focuses on labour. Its questionnaires collects information on hired and family labour input in the agricultural holding, disaggregated by sex, age and other characteristics. This will pave the way to the computation of an AWU type of measure, normalizing the actual contribution of each worker in the holding.

### **3.2 Definitions based on the type of management of the holding**

Many of the sources reviewed pointed out that the terms “family farms” and “smallholder agriculture” are often used as synonyms, especially in the agricultural policy jargon. However, as mentioned, “small” and “family” refer to different concepts.

As documented in Garner and De La O Campos (2014), beside the common use of the term family farms in the literature, authors seldom define or locate family farms within well-

defined categories of agricultural production systems. Thus, also the definitions end up applying varying sets of criteria, depending on the country-context and even the political motivation of the user.

Berdegú and Fuentealba (2011) define *“smallholder or family-based agriculture... as a social and economic sector made up of farms that are operated by farm families, using largely their own labour.”* They note that the *“... two categories [...] could be controversial. The subsistence farmers, who derive a large fraction of their income from non-farm sources, including non-farm employment, remittances and cash and in kind social welfare support. Second, a sub-sector that is smaller in number of farms, but of much greater importance when it comes to economic participation; these are commercial family farmers who may employ one or two permanent nonfamily workers, but where still much of the farm work and of the farm management is done by family members”.*

One of the objectives of Garner and de la O Campos (2014) was identifying the unique aspects of family farms vis-à-vis smallholder farmers. The authors recognize that both these concepts are based on the limitations in size and labour capacity as well as on the barriers these farms face in market access. However, they also illustrate distinctive characteristics of family farms that do not coincide with those of smallholders. They conclude that a uniform definition of “family farm” is difficult, as there is no such a concept that applies to all contexts. Rather than a binding definition, they propose to highlight the most important characteristics of family farms. Using their words “Family Farming (also Family Agriculture) is a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production which is managed and operated by a family and predominantly reliant on family labour, both women’s and men’s. The family and the farm are linked, coevolve and combine economic, environmental, reproductive, social and cultural functions.”

The Consultative Group to Assist the Poor (CGAP), a global partnership of 34 leading organizations hosted by the World Bank, offered a numerical representation of the difference using estimates from the FAO’s State of Food and Agriculture 2014 derived from six different rounds of the World Census of Agriculture (from 1960-2010). The global number of small farms was estimated using the land size criterion with the 2 ha threshold. The GCAP found that 84% of the 570 millions of farms are smaller than 2 hectares. These only operate about 12% of total farmland in the sample. Assuming that this sample is representative of world agriculture, the estimate points to more than 475 million of small farms worldwide.

To identify family farms, the GCAP used two operational criteria, which are common to many definitions:

- A member of the household owns, operates and/or manages the farm, either in part or fully;
- A minimum share of labour comes from the owner and his or her relatives.

In virtually all of the 52 countries which reported information on these criteria, more than 90% of farms were managed by a single individual, a group of individuals or a household – as opposed to being managed by corporations, cooperatives, governmental institutions or other institutional arrangements. In these countries, the vast majority of permanent labour was provided by the household rather than by hired workers. According to these criteria, more than 90% of the farms in the sample countries could be considered family farms. These operate 75% of the agricultural land. Assuming that this sample was representative of farms and agricultural areas worldwide, the estimate points to more than 500 million agricultural holdings in the world to be classified as family farms (Lowder et. al., 2014).

In conclusion, given that 90% of the farms are family farms and 84% small farms, there is an obvious and considerable overlap among the two groups. However, the amount of agricultural land occupied by the two groups differs markedly – family farms control about 75% of all agricultural land and small farms control only about 12%. Hence they are clearly two separated groups. These findings highlight that the terms “family farm” and “small farm” should be used to indicate different groups of farmers, which often overlap but are not the same (Lowder et. al. 2014).

### 3.3 Definitions based on the market orientation of the holding

Many definitions in the literature identify smallholders on the basis of concepts such as subsistence agriculture, own-consumption, or market orientation of the farm. An example is provided by the OECD (2015), which defines smallholders as farmers that *“struggle to be competitive and hence to produce an income to support themselves and their families”*. Furthermore *“they often live in poverty and produce at least part of their produces for self-consumption”*.

The WAW, for instance, considers the criterion associated to output orientation toward commercialization or self-consumption as one of the most useful for identifying farm typologies (Even et. al., 2016). Engagement in market activities is considered to be directly connected to the notion of rural transformation (Davidova et al., 2009).

Also in FAO (2014), farms’ categories are defined on the basis of their relation to markets and their capacity to innovate. These categories include:

- Subsistence and near-subsistence smallholders, who produce essentially for own consumption and with little or no capacity to generate surplus production for the market;
- Small farms that are either market oriented and commercial, generating surplus production for a market (local, national or international), or have the potential to become market-oriented;
- Large farms, showing characteristics of industrial ventures.

The literature on the constraints that smallholders face in accessing markets also suggests criteria for identifying small farms on the basis of their market participation. Wiggins and Keats (2013), suggest that poor farmers are not linked to markets for a variety of reasons:

remoteness, low production, low farm gate prices, and lack of information. In more details, OECD (2015) summarizes the main constraints affecting the access of small farms to the markets (Table 3.2). These limitations are analysed in Arias et. al. (2013).

**Table 2: Major categories of constraints affecting smallholder access to markets (Source: OECD, 2015)**

Resources	Technological	Financial	Product	Structural
Land size, land quality	Land Productivity	Cash flow deficit	Volume	Infrastructure
Water access	Technical Efficiency	Credit	Product quality	Weather
Education	Know-how, training	Insurance	Seasonality of Production	Geography
Health	Storage Capacity		Lack of associativity	Legal
Low Income				Land Tenure

In principle, it would be ideal to identify a criterion allowing to distinguish among farms according to their level of competitiveness. In fact, this is not straightforward. What is relatively easier, is to measure the share of agricultural production allocated to own-consumption, as this information is often collected in many types of surveys including household budget surveys, LSMS, and other integrated surveys. This approach, however, has been seldom used in the statistical practice, partly due to the difficulty of collecting accurate data on consumption – including own-consumption – at the individual level through household budget surveys.

In the EU, market participation of farms is regarded as a potential dimension to be used for defining smallholders for statistical purposes. The EU (2011) proposes a classification of small farms, to be used in alternative or in parallel to the one relying on the land size, based on the proportion of own-consumption of the holding. According to this criterion -- which can be operationalized by setting specific thresholds -- farms are divided into subsistence, semi-subsistence and commercial farms. The EU (2011) states that *“this criterion can provide some information on the economic situation of the farm, since it is possible to deduce that a high level of self-consumption goes hand in hand with low revenues”*.

This approach is controversial. Let’s consider two extreme cases, the first being a subsistence farm that uses all its production for own consumption and to generate income for the family; the second being a farm operated by a family, where all the members work in the farm only marginally during their leisure time from the main employment, which is also their source of income. In both cases, the production of the farm is mainly used for own-consumption. Using this approach we would classify these two completely different farms as smallholdings, i.e. holdings needing support in order to improve their income and

productivity. One possibility to overcome such problems could be to set a minimum proportion of income derived from agriculture for defining “farmers”.

### 3.4 Definitions based on the economic size of the holding

Some of the national official definitions of small farm use concepts related to the economic, rather than physical, size of the holding. The USDA Economic Research Service (USDA-ERS), for instance, defines farm size by making reference to gross cash farm income (GCFI). A small farm is one that produces and sells less than \$250,000 per year.

Also in the EU, the economic size is adopted as a criterion for defining smallholders. Both the Farm Structure Survey (FSS) and the Farm Accounting Data Network (FADN), which are the main official data sources for EU agricultural statistics, provide the necessary data to compute these indicators. Until 2007 the economic size of the holding was measured as Standard Gross Margin (SGM) per holding. The SGM was a measure of the production that considers all the separate activities of an agricultural holding and their relative contribution to the overall revenue. For each activity, the SGM was estimated, considering the area (for crop output) or the number of heads (for animal output) and a standardised SGM coefficient for each type of crop and livestock, calculated separately for different geographical areas to allow for differences in profit. The sum of all these margins per hectare of crop and per head of livestock in a farm is a measure of its overall economic size, expressed in European Size Units or ESU (1 ESU = 1200-euro SGM). Since 2010, however, the SGM has been replaced by the so called “Standard Output” (SO). The SO is the average monetary value of the agricultural output at farm-gate price, in euro per hectare or per head of livestock. A regional SO coefficient is calculated for each product, as an average value over a reference period of 5 years. The sum of all the SO per hectare of crop and per head of livestock in a farm is a measure of its overall economic size, expressed in euro. Economic sizes measured as SGM and SO are not comparable with each other. In fact, the way they are calculated differs:

- $SGM = Output + Direct\ Payments - Costs$
- $SO = Output$

Standard output thresholds could be, in principle, used as international thresholds, once converted in international dollars or Purchasing-Power-Parity dollars. This would allow an effective comparability of the economic size of the holdings across countries. However, poor data availability and statistical capacity in many countries has so far prevented the use of this criterion.

The economic size of the holding has been recommended as a valid criterion also for the identification of farm typologies in the WAW framework. Looking at economic-related indicators instead of (or in addition to) physical-based indicators, it is in fact possible to compare farms involved in widely diverse agricultural activities. In this respect, the consideration of the revenues instead of the income of the holding is perhaps the best

option. Indeed, high cost of production in one particular year may result in negative or very small income values for farms that, in other circumstances, would not be considered small.

### 3.5 Definitions based on multiple criteria

Definitions in this group are based on combinations of the criteria reviewed so far. While being comprehensive in nature, these approaches were seldom operationalized in statistical terms, let alone used to produce internationally comparable indicators. One of the few examples available are the country-specific definitions reported by the High Level Panel of Experts in Food Security and Nutrition (CFS HLPE, 2013).

Among these, the panel reports that in Argentina smallholders are defined as farmers showing simultaneously the following two characteristics:

- The producer works directly on the farm; he/she does not hire non-family permanent labour but may occasionally resort to temporary hired workers.
- The farm is not registered as a joint stock company or other type of commercial company. It also satisfies a series of upper limits on the endowment of assets: farm size, cultivated size of the farm, and size of cattle herd, machinery assets, planted area with fruit trees and irrigated area. Upper limits vary in the different regions of the country: for farm size between 500 and 5000 ha, for cultivated size between 25 (in irrigated oases) and 500 ha. Upper limit for cattle is 500 units of livestock.

Another example of multiple criteria is the one proposed by the WAW for the identification of farm typologies. The main objective of this classification method is to support countries in improving their knowledge and understanding of their farming sector to better inform the policy-making process. Using the terminology adopted in this paper, the WAW framework suggests to identify farm typologies by looking jointly at three groups of indicators: 1) The economic size, 2) the type of management and 3) the market orientation of the holding, that is, the share of product which is sold in the market. The combination of these criteria is meant to be country-specific, and to be the result of a participatory process involving multiple stakeholders, that is, Government, civil society and the private sector.

One reason why multiple criteria were seldom applied to identify smallholders or other target groups is to be found mostly in the lack of consistent data allowing to simultaneously implement more than one criterion. This is even more the case for international comparisons, which entail having comparable data for different countries. Furthermore, the use of multiple criteria requires, on top of the choice of the criteria, a method to combine them. For instance, it is possible to decide, as it is the case of Argentina, that smallholders are identified by the intersection of two sets of farmers identified by different criteria. But it would be equally possible to use, for instance, the union of the two sets, or to use any other hierarchical combination of the criteria, or any other weighting of the criteria.

The SDG monitoring process looks at smallholder food producers mostly as farmers that suffer from structural constraints in their operation, and are at risk of poverty. At the same time, the SDG process requires mainly an international comparison, which needs to take place in a world of widely variable data availability. While in some countries data would allow an accurate measurement, which would not suggest the use of simplified criteria, in other countries there is no choice but relying on the little information available. This implies, as discussed in Section 5, that one way to overcome the difference in data availability in an international comparison is to combine different criteria. This would allow countries with little data to use a simpler approach, while more data becomes available in all countries.

To conclude this Section, Table 3 below summarizes the key advantages and limitations of the different criteria, as they were discussed so far.

**Table 3: Review of alternative criteria to define smallholders**

Category	Criteria	Type of data sources	Pros	Cons	How does it work in practice?
Production factors endowment	Land size	Agricultural surveys, Agricultural Censuses, Integrated household surveys	Simple to measure, easily available, widely utilized in the literature for statistical and economic analysis.	It does not account for: 1) quality of resources, type of crops grown, disparities across countries and regions; 2) socio-economic and agro-ecological characteristics; 3) land distribution	This criterion can be utilized setting a threshold of land size (or number of livestock) under which the farm is considered small.
Production factors endowment	Labour Input	Agricultural surveys, Agricultural Censuses, Integrated household surveys	It can give a good indication of the dimension of the holding	Measuring labour input is not straightforward. The criterion does not account for: 1) quality of labour; 2) socio-economic and agro-ecological characteristics; 3) factors that could affect the quantity of labour input	This criterion can be utilized by setting a minimum number of equivalent full-time workers under which the farm is considered small.
Type of Management	Family Farming	Agricultural surveys, Agricultural censuses, Integrated household surveys, Household budget surveys	data easily available	Family farms and smallholders are different agricultural categories.	This criterion can be utilized selecting an operative definition of family farm (Lowder et. al. 2014).
Market Orientation	Market Orientation	Agricultural surveys, Integrated household surveys, Household budget surveys	It gives an idea of the of the competitiveness and of the returns of the holding	1) Quite difficult to measure in a harmonized way; 2) If expressed through the share of own-consumption, it provides only a partial representation of the economic situation of the holding.	A possible solution to make this criterion operative, consists in setting a share of own-consumption of the holding.

<b>Economic Size of the holding</b>	<b>Economic Size</b>	Agricultural surveys, Integrated household surveys	Give a representation of the economic situation of the holding and its risk of incurring in poverty	Reliable and homogenous data could be more difficult to get.	This criterion entails setting a threshold to the standard value of production or the standard output under which a farm is considered small.
<b>Multiple criteria</b>	<b>Multiple criteria</b>	Agricultural surveys, Agricultural censuses, Integrated household surveys, Household budget surveys	More complete than a single criterion	More time and data consuming	This criteria can be applied using a combination of the thresholds considered for the other groups.

#### 4. Absolute versus relative measures

Once a set of criterion variables are adopted, the issue remains of choosing a convenient threshold that separates “small-scale food producers” from other producers. Thresholds can be set either in absolute or relative terms. Most criteria reviewed in the previous section can be cast both in absolute or relative terms. An absolute approach will use, for a given criterion, the same threshold in all contexts; in the case of the SDG monitoring, the same exact threshold will be applied in all countries, regardless of their agro-ecological and socio-economic conditions. A relative approach, instead, entails setting a threshold at one point in the *cumulative distribution function* of the criterion variable. This will separate small- from the non-small-scale producers. Thresholds set with the relative approach, therefore, will result in country-specific thresholds, depending on how the criterion variable is distributed in each country. None of the two approaches is *a priori* superior, and the choice between the two should be made by keeping in mind the purpose of the exercise. But what would be the difference in practice?

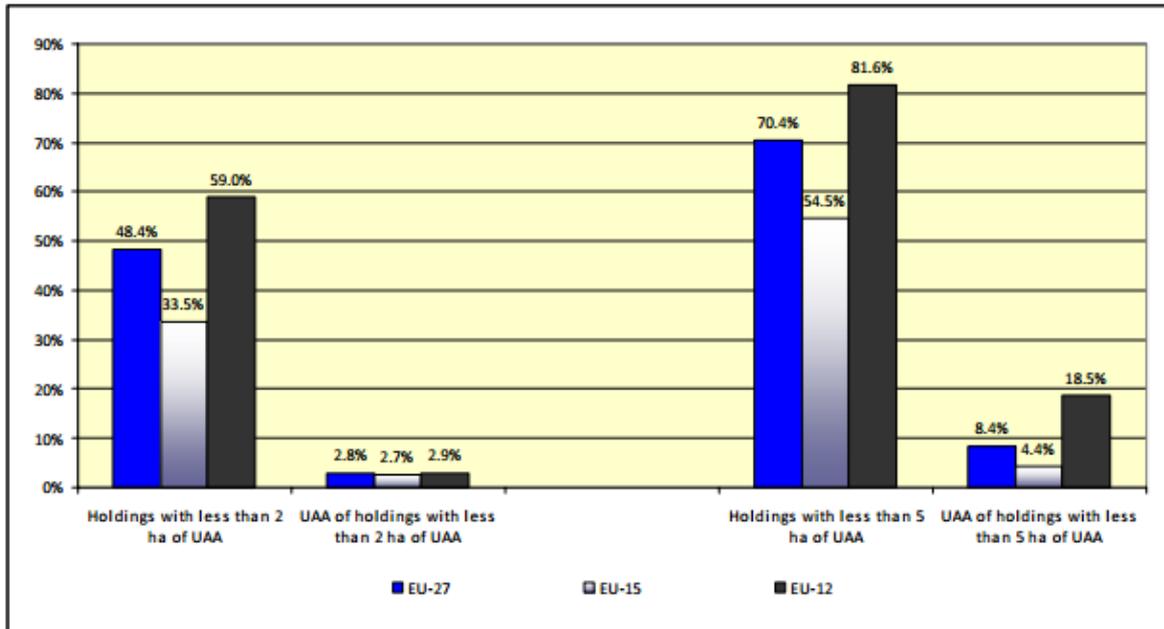
Below we report a numerical example from the EU agricultural economic brief (2011), which helps illustrating the difference between the two approaches. Figure 2 shows the share of farms that would be classified as small in the EU-27<sup>8</sup> using 2-hectare and 5-hectare absolute thresholds. The criterion variable chosen in this case is the Utilized Agricultural Area (UAA). With the 2-hectare threshold, the percentage of farmers showing a UAA smaller than the threshold varies significantly among countries. However, in all cases the combined UAA of small farmers accounts for less than 3% of the total operated acreage. This indicates that the EU-12 group includes countries where land is more asymmetrically distributed than in other country groups.

A corresponding relative approach is a threshold that covers the smallest farms whose combined acreage accounts for e.g. 10% or 20% of the total hectares of operated land in a country. From the same source, Figure3 shows the share of farms in the EU that would be classified as small based on a relative threshold. This is designed to include in the

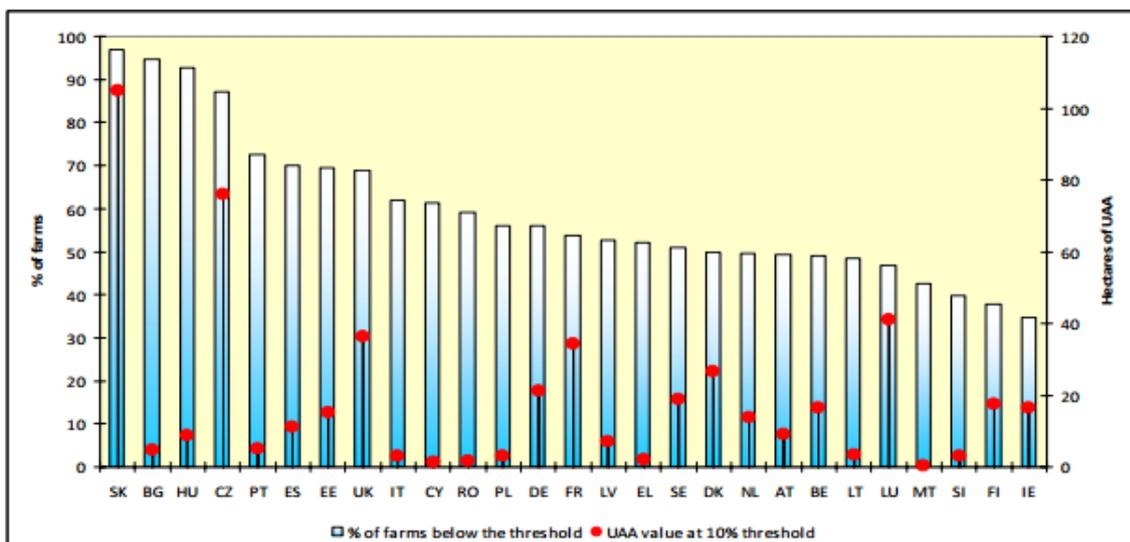
<sup>8</sup> In Figure 4.1 labels of “new” and “old” member states aggregates refer to the 2004 enlargement of the EU.

smallholder set the farms whose combined UAA makes up 10% of the total UAA in each member country. As seen, the UAA threshold that identifies small farms varies significantly from country to country, and is often different from the absolute 2- or 5-hectare reported in figure 2.

**Figure 2: Share of holding with less than 2 and less than 5 ha of UAA and their UAA in the EU (Source: EU Agricultural Economic Brief, 2011. Data from EUROSTAT, Farm Structure Survey, 2007)**



**Figure 3: Share of farms when UAA threshold is set at 10 % of total UAA and corresponding area (ha) threshold in the Member States (Source: EU Agricultural Economic Brief, 2011. Data from EUROSTAT, Farm Structure Survey, 2007)**



Among relative thresholds, Key and Roberts (2007) suggest the so-called weighted-median acreage, which identifies as small the farms sizes accounting for the bottom 50% of total acreage. An example can help illustrating this approach. Table 4 reports the size of the operated land of five hypothetical farms. To compute the acre-weighted median, farms are ordered from the smallest to the largest. The mid-point of the total operated land – 22 hectares – would correspond, in this case, to the farm that operates 10 hectares. This would be the threshold, thus all holdings operating less than 10 hectares will be classified as small scale. This approach was used to identify smallholders in the FAO’s Smallholder Data Portrait project (Rapsomanikis, 2015).

**Table 4: Example of calculation of the acre-weighted median**

	Operated land (ha)	Cumulated land (ha)
Farm 1	2	2
Farm 2	5	7
Farm 3	7	14
Farm 4	10	24
Farm 5	20	44
Total operated land	44	
Median ha	22	

An alternative and more general relative approach for the identification of small farms is presented in Doran (1985) - cited in Karfakis and Hammam Howe (2010), Gorton and Davidova (2004), Verma and Bromley (1987). The arbitrarily-selected cut-off is replaced by a threshold estimated from the data using a switching regression. Let  $Z$  be the farm size -- or any variable used to characterize the smallholder farmer – and  $\Phi(Z)$  be a function that accounts for the multidimensional character of the smallholders. Goldfelt and Quandt (1972) suggested to estimate  $\Phi$  using the cumulative normal distribution function. Therefore,

$$\Phi(\mu, \sigma) = \Phi\left[\frac{Z - \mu}{\sigma}\right]$$

The parameter  $\mu$  defines the mean of the distribution and the cut-off point, while  $\sigma$  is the standard deviation. With a 95% confidence interval, small and large farms are those for which  $Z < \mu - 1.96\sigma$  and  $Z > \mu + 1.96\sigma$ , respectively. If  $\sigma = 0$  or is not significantly different from zero, the threshold  $\mu$  will allow identifying two categories of holdings, small and large. If  $\sigma$  is significantly different from 0, it would be possible to identify a third category of farms in between the two above mentioned. One limitation of Doran’s (1985) approach is the need to assign a form to the distribution followed by the criterion variable

used for identifying smallholders. As seen in **Figure 1** above, the normal or logistic model can be inappropriate, for instance, for land.

Which one, among the relative the absolute, is the most suitable approach for monitoring SDGs 2.3.1 and 2.3.2? Both show advantages and drawbacks. By and large, an absolute approach emphasizes comparability among countries, while the relative one emphasizes countries' specificities. As observed also by the EU (2011), a relative approach is more appropriate when national specificities and different patterns need to be taken into account.

Absolute thresholds - such as the popular 2-hectare threshold – point towards the condition of globally extreme deprivation of those involved in food and agricultural production. The weakness of smallholders is not seen as context-specific relative phenomenon, but rather as global condition, regardless of where the specific producer operates. Furthermore, the definition of an absolute threshold could be linked to measures of extreme poverty, thus establishing a close relationship between SDG 1 and SDG 2. This linkage, however, would not be feasible if the threshold is set in physical terms, as it is the case, for instance, of the 2 or 5 hectares land threshold; the reasons is that natural conditions and the organization of production are key determinants of the average farm size. Thus, a 2-hectare threshold may capture virtually all farmers in one country, and a negligible share of farmers in another, depending on the average farm size.

For the purpose of monitoring SDG indicators 2.3.1 and 2.3.2, however, the absolute approach shows key limitations. The surveys that will collect data on small scale producers throughout the monitoring period will likely be based on consistent sampling, but not on repeated panels. This means that the composition of the target population of small scale producers will change during the monitoring period, and possibly decrease in size. In the target population, the best performing producers will likely “graduate” to a non-small-scale condition, while the worst performing producers will not; and some bad performers may possibly join the small-scale's group. If the threshold is set in absolute terms, the dynamic of the target population will result in an adverse selection bias, whereby more and more of the worst performers join the small-scale group. The target population, in other words, would evolve by selecting those who do not graduate to a non-small scale condition, and those whose performance worsens during the monitoring period. The monitoring may thus yield paradoxical results. For instance, a country in which the number of small-scale food producers would be drastically reduced may report no progress on indicators 2.3.1 and 2.3.2, if those few remaining below the “small-scale food producers” thresholds were to show no progress in income and labour productivity.

This problem would not materialize if the threshold is set in relative terms. The target population would include, in every period, producers who perform *relatively* worse than others. If many farmers increase their scale of production during the monitoring period, the monitoring would still show the position of those performing relatively worse than others.

The country in the example above – where the number of small-scale food producers would be drastically reduced -- would still report progress, as the improvements of farmers' access to land, herds and revenues would affect the distribution of these variables, and signal the changed conditions of farmers located in the bottom part of the distribution.

Finally, it is important to notice that most thresholds, either absolute or relative, are somewhat arbitrary, and set at intuitively low levels of endowment or their distribution. This is the case of the popular 2-hectare or 5-hectare thresholds, or the bottom 50% of the distribution of land or any other variable. Equally arbitrary is the expectation – that can easily be developed by reading the literature -- that that small-scale producers are about 70 to 90 percent of total farmers.

#### **5. Towards a workable definition of smallholders for the SDG monitoring framework**

As mentioned, in the context of the SDGs, the notion of “small-scale food producer” seems to point mostly towards a condition of disadvantage.

Criteria based on endowment of key productive resources such as land and labour reflects the aim of capturing structural constraints in production. The assumption is that farmers with small endowments of key resources are likely to be operating at sub-optimal scale, and to be hampered in the achievement of their productivity and income potential. However, the physical size fails to consider the quality of the products obtained, the farming systems, and the many and wide disparities that exist across countries and regions in terms of socio-economic and agro-ecological characteristics and distribution of resources.

One suitable approach to overcome these limitations, is to combine the physical size of the farm with some measure of economic size. This additional criterion provides a more accurate view and a more precise identification of small-scale food producers compared to endowment of physical resources. Consistent with the spirit of target 2.3, the combination of physical constraints and economic results allows capturing and identifying as small-scale food producers those that have limited access to land, resources, input and technology, and therefore obtain poor economic results.

Given the criteria reviewed in the previous sections, a workable definition to be used in the monitoring framework of SDG2 should likely be based on a combination of two of the criteria reviewed, namely the physical size and the economic size of the farm. While physical size is far more popular than economic size among the criteria used for identifying smallholders, it is evident that a combination of these two elements allows overcoming certain limitations of the criteria based solely on the physical size. If a land-based criterion is combined with an economic one, for instance, it is possible to ensure that very well-off producers operating on small land plots – eg intensive horticultural producers operating in greenhouses – do not end up being considered small-scale.

Considering data availability and the possibility of obtaining consistent information across countries, the physical size of a farm can be expressed by the amount of operated land and number of tropical livestock units (TLUs) in production, while the economic size can be expressed by its revenues. The use of revenue as an additional criterion reduces the risk of classifying as small-scale food producers who manage to achieve substantive economic results, even from a small resource base.

One limitation of the revenue as a measure of the economic size is that it does not take into account differences in production costs among farms, which can be significant. This variable is preferable to any proxy of income – or the gross margin – as indicator 2.3.2 is itself aimed at measuring income. It would not be logical, therefore, to identify small-scale food producers through income for the purpose of measuring their progress in the same variable. The discriminating variable that identifies small-scale food producers, in other words, must be independent from the target of the monitoring exercise. Moreover, data on costs of production are more difficult to obtain and less frequently collected than data on revenues. In this connection, another limitation that is also worth noticing is the fact that all the variables chosen to identify smallholders – land, livestock heads and revenues – exhibit some degree of correlation with income and productivity. This is the case for virtually any variable that can be used to describe the scale of production.

To inform the selection of a workable definition, we tested a number of different approaches of combining the physical and the economic size criteria. The test was performed on a sample of 27 countries, using micro data collected in household surveys and processed in the framework of the Rural Livelihood Information System (RuLIS) initiative of FAO.

The key element that was assessed was the implementation of either absolute or relative thresholds. Different combinations were tested, including the physical and the economic size of a holding, and considering different thresholds, such absolute thresholds, combinations of relative and absolute thresholds, and relative thresholds only. More specifically, the following definitions were tested:

- 1) Fully absolute 1: Smallholders are defined as producers with less than 5 ha, 5 TLUs and 1000 USD of revenues.
- 2) Fully absolute 2: Smallholders are defined as producers with less than 5 ha, 5 TLUs and 2000 USD of revenues.
- 3) Fully absolute adjusted with the World Bank extreme poverty line and the average household size: Smallholders are defined as producers with less than 5 ha, 5 TLUs and 5152 USD of revenues.
- 4) Fully absolute adjusted with the World Bank moderate poverty line and the average household size: Smallholders are defined as producers with less than 5 ha, 5 TLUs and 8405 USD of revenues.

- 5) Hybrid 1: Smallholders are defined using an absolute physical threshold and a relative economic threshold. Specifically, we considered producers with less than 2 ha of operated land and 5 TLUs and with less than the bottom 40% of agricultural revenues.
- 6) Hybrid 2: Smallholders are defined using an absolute physical threshold and a relative economic threshold. Specifically, we considered producers with less than 5 ha of operated land and 5 TLUs and with less than the bottom 40% of agricultural revenues.
- 7) Fully relative definition: smallholders are defined taking the bottom 40% of the (i) operated land size, (ii) the Tropical Livestock Units and (iii) the distribution of revenues.

The percentage of smallholders resulting from the application of the above mentioned 7 definitions are reported in **Table 5**. In the same table, the percentage of smallholders obtained looking only at two absolute thresholds of operated land -- 2 hectare and 5 hectare -- are displayed.

When only land size is considered, this variable does not show much discriminatory power, as in most countries the percentage of smallholders turns out to be higher than 70 percent. A similar, more definite, pattern emerges with the higher threshold set at 5 hectares. This suggests that it is desirable for a definition to rely on additional variables, in order to accurately identify the vulnerable groups targeted by SDG 2.3.

The discriminatory power of the definition increases when we combine the economic size of the farm to the physical size. Therefore, the level of revenues of the farm was included in the definition and various thresholds were experimented.

First, as a rule of thumb, we experimented with absolute thresholds of PPP \$1000 and PPP \$2000 of revenues per year. These thresholds turned out to produce a wide differentiation across countries; the global percentage of smallholders was dramatically reduced compared to the physical size thresholds of 5 hectares and 5 TLUs.

Another experiment was conducted, taking into consideration the international poverty lines of PPP \$1.90 and PPP \$3.10 as a starting point. The two poverty lines were annualized and multiplied by the average number of household members in the country sample, to obtain a proxy for annual net income. We then considered the share of costs in the revenues, to obtain a reference threshold value of revenue corresponding to the two poverty lines. Two absolute thresholds were thus obtained for the economic size, which are \$5152 and \$8405.

Figures for the absolute thresholds, however, are puzzling. A comparison among countries such as, for instance, Burkina Faso and Mali, shows widely diverging results, with 78 percent of farmers in Burkina Faso to be considered as 'small-scale', and 36 percent in Mali. More similar examples can be drawn from Table 5.

Relative thresholds allow reducing these discrepancies. The three fully relative approach, that considers the bottom 40 percent of the land size, the TLU and farm revenue distributions, seems to produce more stable and realistic results. Countries from the same region, with some degree of comparability, would show more similar results in terms of shares of 'smallholders'. One example is, again, Burkina Faso and Mali, whose shares of smallholders were 54% and 35%, respectively.

**Table 5: Percentages of smallholders obtained with various thresholds set in absolute and relative terms**

Country	Year of the survey	% of smallholders 2 ha	% of smallholders 5 ha	% of smallholders (5 ha & 5 TLUs & \$1000 )	% of smallholders (5 ha & 5 TLUs & \$2000 )	Hybrid definition (2 ha of land, 5 TLUs and bottom 40% of revenues)	Hybrid definition (5 ha of land, 5 TLUs and bottom 40% of revenues)	Absolute with extreme poverty line	Absolute with moderate poverty line	Fully relative definition
Albania	2005	97%	100%	9.7%	19.1%	51.9%	52.8%	56.8%	68.6%	24.4%
Armenia	2010	96%	99%	59.5%	69.3%	86.0%	86.6%	81.9%	88.3%	76.2%
Bolivia	2008	89%	97%	24.8%	41.2%	63.2%	65.8%	69.2%	79.1%	27.7%
Burkina Faso	2014	45%	81%	54.9%	73.4%	42.2%	68.0%	78.5%	78.7%	53.8%
Cambodia	2009	68%	96%	20.8%	48.4%	47.0%	65.1%	85.2%	90.1%	26.4%
Ecuador'06	2006	65%	83%	11.7%	20.2%	17.3%	20.0%	27.8%	29.4%	35.8%
Ecuador'14	2014	64%	84%	10.9%	19.3%	24.1%	31.3%	29.5%	32.0%	34.0%
Ethiopia	2013	82%	99%	46.7%	66.5%	62.2%	67.1%	84.1%	86.2%	41.6%
Georgia	2014	96%	99%	77.6%	88.9%	85.2%	86.8%	96.3%	97.5%	59.2%
Ghana	2013	60%	91%	24.8%	39.6%	54.2%	76.3%	67.1%	78.9%	39.1%
Guatemala	2011	91%	99%	62.5%	76.6%	80.1%	85.6%	91.2%	94.2%	58.7%
Iraq	2012	61%	85%	6.9%	11.0%	20.5%	27.2%	19.5%	23.4%	23.3%
Kenya	2005	92%	100%	34.1%	48.9%	60.2%	65.4%	65.1%	69.0%	43.9%
Malawi	2011	97%	100%	86.6%	95.1%	80.4%	81.4%	98.7%	98.8%	61.3%
Malawi	2013	98%	100%	69.0%	88.0%	78.6%	79.0%	97.8%	98.9%	51.5%
Mali	2014	41%	69%	16.5%	27.2%	15.9%	29.2%	36.3%	37.1%	34.6%
Nepal	2011	69%	93%	19.2%	47.4%	49.6%	63.0%	80.8%	85.1%	21.3%
Nicaragua	2014	55%	78%	12.4%	20.7%	21.6%	28.9%	30.6%	32.8%	24.5%
Niger	2011	33%	65%	53.2%	57.6%	29.9%	58.8%	59.2%	59.5%	64.5%
Nigeria	2013	91%	99%	23.5%	41.5%	67.0%	72.7%	70.0%	79.0%	55.9%
Pakistan	2014	63%	96%	4.1%	10.0%	43.9%	54.5%	26.4%	39.5%	28.5%
Panama	2008	77%	85%	32.8%	37.4%	36.1%	41.1%	39.7%	40.0%	48.0%
Peru'10	2010	77%	92%	25.4%	39.0%	49.5%	57.2%	53.5%	57.1%	64.2%
Peru'14	2014	80%	95%	22.9%	38.7%	50.9%	58.5%	56.5%	61.7%	56.8%
Rwanda	2013	7%	23%	8.3%	8.8%	1.8%	8.0%	9.0%	9.0%	26.3%
Tanzania	2013	72%	96%	55.7%	73.3%	60.6%	77.8%	82.0%	82.9%	56.2%
Timor-Leste	2007	98%	100%	19.7%	39.0%	56.8%	57.1%	59.0%	66.2%	46.2%
Uganda'11	2011	61%	92%	28.9%	41.1%	53.2%	77.0%	86.5%	87.6%	62.0%
Uganda'13	2013	67%	96%	56.8%	74.6%	56.7%	76.5%	88.0%	90.0%	53.5%
Vietnam	2010	90%	97%	10.9%	19.5%	72.9%	73.5%	49.3%	69.0%	58.8%

## 6. Concluding remarks

This paper reviewed alternative approaches to defining smallholders in the literature, using various national and international sources. Given the absence of one-size-fits-all solution, the guiding principle of this review was that the appropriate definition has to be tailored to the specific objective of the analysis. In this case, the focus is to operationalize a definition of small-scale food producers that would enable to monitor target 2.3. of the Sustainable Development Goals, and specifically the labour productivity (indicator 2.3.1) and income (indicator 2.3.2) of small food producers.

Less data-intensive criteria, typically those based only on land endowment such as the popular 2-hectare threshold, are easily implemented in most countries, but run the risk of resulting in poor targeting. More data-intensive approaches have the advantage of better capturing the meaning of SDG2 and its focus on small scale food producers. Monitoring incomes and labour productivity requires, in any case, pretty detailed data, which can also be used to identify small-scale producers with more accuracy.

Regarding the choice between an absolute and a relative approach to the definition of smallholders, the first emphasizes international comparability, while the second emphasizes national specificities and allows identifying farmers who are disadvantaged with respect to the country characteristics. However, the absolute approach seems to suffer from considerable drawbacks, related to the potential for an adverse selection bias that may hamper the monitoring of SDG 2.3 indicators. The monitoring process, in other words, may end up targeting systematically the worst performing producers. While the relative approach results in different thresholds and proportions of small-scale food producers in each country, it avoids adverse selection biases, and it guarantees that the target population is always the relatively more disadvantaged.

A number of tests performed on a sample of 27 countries, using data from 30 household surveys documented in Annex B. The results show that the number and share of small scale producers is highly sensitive to the choice of the thresholds. Among the alternative options that were tested, promising results were shown especially by the combination of the bottom 40 percent of Physical size – measured by operated land in hectares or the Livestock heads expressed in Tropical Livestock Units; and the economic size expressed as total revenues.

Finally, it is worth highlighting that this paper is meant to serve as first step in the process that will lead national and international stakeholders to agree on a common approach for identifying smallholders for monitoring SDG indicators 2.3.1 and 2.3.2. At the same time, it will be impossible to identify a definition that accommodates all national specificities at the same time. Therefore, any internationally agreed definition is not intended to replace country-specific definitions, which are meant to continue reflecting national policy priorities.

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## ANNEX A: Glossary of Smallholding Definitions

Source	Definition
<b>Agricultural Census, India</b>	<p>The Agricultural Census of India distinguishes between five size classes of farmers:</p> <ul style="list-style-type: none"> <li>- Marginal farmers below 1 ha;</li> <li>- Small farmers between 1 and 2 ha;</li> <li>- Semi-medium farms between 2 and 4 ha;</li> <li>- Medium farms between 4 and 10 ha;</li> <li>- Large farms above 10 ha.</li> </ul>
<b>Berdegú and Fuentealba (2011)</b>	<p>"Smallholder or family-based agriculture is defined as a social and economic sector made up of farms that are operated by farm families, using largely their own labor. Therefore, they include two categories that could be controversial. The subsistence farmers, who derive a large fraction of their income from non-farm sources, including non-farm employment, remittances and cash and in kind social welfare support. Second, a sub-sector that is smaller in number of farms, but of much greater importance when it comes to economic participation; these are commercial family farmers who may employ one or two permanent nonfamily workers, but where still much of the farm work and of the farm management is done by family members."</p>
<b>Bollinger and Olivera (2010)</b>	<p>Smallholdings are identified using the land size criterion. Farms are considered to be small when they have a territory of 10 ha or less.</p>
<b>Braun (2004)</b>	<p>They define small farms through the land size criterion</p>
<b>Brooks, Cervantes-Godoy, and Jonasson (2009)</b>	<p>"Here the term smallholders is taken as shorthand for farm households which struggle to be competitive, either because their endowments of assets compare unfavorably with those of more efficient producers in the economy or because they confront missing or under-developed markets. A limiting factor may be insufficient farm size, although other assets, such as farm management skills may also be lacking. It is important to note that what constitutes a small farm may differ markedly from one country to the next. For example, the average farm size in many Asian countries is less than a hectare, whereas much larger operations in Latin America may be considered as small."</p>
<b>Censo Agro-Pecuario (1999/2000) Instituto Nacional de Estadística. Mozambique</b>	<p>In the Agricultural Census Mozambique farms are classified according to the size of their cultivated area or livestock population. They distinguish between small, medium and large farms. In particular, small farms are farms with less than 10 ha of cultivated area without irrigated land, fruit trees or plantation, or less than 10 head of cattle, or less than 50 head of sheep/goats/pigs or less than 5000 head of poultry.</p>

<b>CFS HLPE (2013)</b>	A smallholding is: “.. An agricultural holding run by a family using mostly (or only) their own labor and deriving from that work a large but variable share of its income, in kind or in cash. The family relies on its agricultural activities for at least part of the food consumed – be it through self-provision, non-monetary exchanges or market exchanges. The family members also engage in activities other than farming, locally or through migration. The holding relies on family labor with limited reliance on temporary hired labor, but may be engaged in labor exchanges within the neighborhood or a wider kinship framework.”
<b>Chamberlin (2008)</b>	“Built into the epithet smallholder is the connotation of limited land availability. However, many other aspects of smallness are critical to characterizing resource-poor small farmers in the developing world, such as limited capital (including animals), fragmented holdings, and limited access to inputs. Noting that resource-poor livestock keepers are a very diverse group, Chipeta et al. (2003) argue that defining the group by the number of animals held by a household may be misleading...landholding size is perhaps the most direct and easily introduced indicator of who is a smallholder.”
<b>CORDAID (2015)</b>	Smallholders are small-scale farmers, pastoralists, forest keepers, fishers who manage areas varying from less than one hectare to 10 hectares. Smallholders are characterized by family-focused motives such as favoring the stability of the farm household system, using mainly family labor for production and using part of the produce for family consumption. Smallholders sell part of their crops on the market to earn an income to cover for household expenses like clothing, school fees, medicines and transport. The degree to which smallholders are integrated into markets differs widely.
<b>Dalberg Global Development Advisors (2012).</b>	Smallholders are defined as those farms operating a land of 2 ha or less
<b>Dan (2006)</b>	“China presents a unique type of smallholder farming. Collective land ownership ensured that every rural family has user rights for farming. According to the WCA there are close to 200 million smallholder farmers in rural China, and up to 250 million according to Dan (2006). The average farm size is less than 0.6 ha and is declining over time.”
<b>CFS HLPE (2013)</b>	“In Argentina the definition combines various criteria covering agro-physical situation (by provinces), which also corresponds to different types of farming systems, reference to the type of labor used (family labor), and legal status (not being registered as a corporation). The criteria used to differentiate the holdings also take into account the level of assets: machinery, size of cattle herd, planted or irrigated areas. In Argentina, Smallholders are those producers running a farm under the following criteria: 1) the

	<p>producer works directly on the farm; 2) the producer does not employ non-family permanent labor; 3) the producer may hire temporary non-family labor. 4) The following conditions were established to avoid census registration of cases that were evidently non-family being incorrectly considered. 5) The farm is not registered as a joint stock company or other type of commercial company. 6) Upper limits of “capital level”: farm size, cultivated size of the farm, and size of cattle herd, machinery assets, planted area with fruit trees and irrigated area. Upper limits vary in the different regions of the country: for farm size between 500 and 5000 ha, for cultivated size between 25 (in irrigated oases) and 500 ha. Upper limit for cattle is 500 units of livestock.”</p>
<b>Dixon, Taniguchi, and Wattenbach (2003)</b>	The FAO study defines smallholders as farms with limited resource endowments, relative to other farmers in the sector.
<b>ETI Report (2005)</b>	“The fair trade movement uses dependence on family, as opposed to non-family, labor as the basis for their definition. Smallholders may also be referred to as outgrowers. The term ‘outgrowers’ is usually used to mean smallholders in a more formal, managed relationship with an exporter. However, both terms are used differently across the world in different contexts. In this document we have used the term smallholders to cover both situations.”
<b>European Commission: Report on the future of smallholders (2015)</b>	The European commission uses definitions based on the economic size of the holding - the so-called ESU (European Size Unit), and on the number of persons who work in the holding, which forms the basis of the so-called AWU (Annual Working Units), and for some time a new category has been gaining in popularity - the standard output (SO), which is expressed in euros. According to this new typology, very small agricultural holdings are those with an SO under EUR 8 000 and small agricultural holdings are those with an SO of between EUR 8 000 and EUR 25 000. ...The most popular and at the same time most incomplete definition is based only on the area criterion, i.e. the Utilized Agricultural Area in hectares (UAA). It is thus generally assumed that small agricultural holdings are those of less than 2 or 5 ha UAA .
<b>Fairtrade Foundation</b>	The Fairtrade Labelling Organization (FLO) defines a smallholder as a producer who is dependent on family labor as a basis for its definition. Smallholder farmers supplying into Fairtrade markets are typically organized into cooperatives or producer associations which provide the link with the market and offer different levels of support to their members.
<b>Fan, S et al. (2013)</b>	the land size criterion is used in this publication
<b>FAO (2010)</b>	“Using the middle-sized farm as a threshold takes into consideration country specific conditions which shape the size of farms. For example, the middle-sized farm in Guatemala is 42 hectares, while the middle-sized farm in Viet Nam is 1.2 hectares.

	Population density and the use of irrigation in Asian countries, as compared with rain-fed agriculture in Latin America, are among the factors that determine these differences in the distribution of farm sizes."
<b>FAO (2013)</b>	"An agreed definition of what constitutes a small-scale farmer must include a territorial and socio-economic assessment that considers the level of technology and external inputs used, the production process used and its relation to the local environment, agro-biodiversity involved in the production process and type of employment existent, among other factors."
<b>FAO (2014)</b>	The term 'smallholder' refers to their limited resource endowments relative to other farmers in the sector. Thus, the definition of smallholders differs between countries and between agro-ecological zones. In favourable areas with high population densities they often cultivate less than one ha of land, whereas they may cultivate 10 ha or more in semi-arid areas, or manage 10 head of livestock. Often, no sharp distinction between smallholders and other larger farms is necessary. Smallholders represent a large number of holdings in many developing countries and their numbers have increased in the last two decades.
<b>FAO RAP (2002-03)</b>	smallholder farms are defined as those farms operating 2 ha or less
<b>FAO SOFA e SOFI 2014 and 2015</b>	This publication uses the land size criterion to classify farms (choosing the absolute thresholds of 2 hectares for small farms).
<b>FAO, ESA (2014)</b>	This paper discusses farm size worldwide using as reference threshold the 2 ha of land size.
<b>FAO (2015c)</b>	The " <i>World Programme for the Census of Agriculture 2020. Volume 1: Programme, concepts and definitions</i> " explains that many countries apply a minimum size limit for the inclusion of agricultural units in the census. The manual states that "various criteria may be used to establish minimum size limits, such as area of holding, area of arable land, area of temporary crops, number of livestock, number of livestock over a certain age, quantity of output produced, value of agricultural production, quantity of labour used and quantity of produce sold." However, specific guidelines on how to define smallholders are not provided as part of the methodology.
<b>Hazell et al. (2007)</b>	They describe small farms as those depending on household members for most of the labor or those with a subsistence orientation, where the primary aim of the farm is to produce the bulk of the household's consumption of staple foods
<b>Hazell et. al. (2009)</b>	smallholders are defined as those farms operating a land of 2 ha or less
<b>Hazell et.al. (2010)</b>	the land size criterion is used in this publication

<b>IFAD (2009)</b>	The term “small farm” and “family farm” are used interchangeably (the paper starts saying: small farms, also known as family farms, have been defined in a variety of ways). In this paper, small farms have been defined as those with less than 2 hectares of land area and those depending on household members for most of the labor.
<b>Japan Census of Agriculture</b>	In Japan, there is no official nor statistical category for "smallholder", however, scholars and officials usually consider size of the holding and part-time farming as criteria.
<b>Key and Roberts (2007b)</b>	The so-called middle-sized farm approach, determines smallholders through the weighted median and is calculated by ordering farms from the smallest to the largest and choosing the farm size at the middle hectare as the threshold to choose smallholders in each country/region.
<b>Key, N, Roberts, M, (2007a)</b>	This paper defines small farms in the US as those with less than 50 acres. This threshold is determined with the weighted median approach.
<b>Kirsten and Zyl (1998)</b>	"A small farmer is one whose scale of operation is too small to attract the provision of the services he/she needs to be able to significantly increase his/her productivity".
<b>Lipton (2005)</b>	In this paper, the concept of “family farms” and “small farms” are used interchangeably. Family farms are defined as "operated units that derive most labor and enterprise from the farm family."
<b>Livingston, Schonberger and Delaney (2011)</b>	smallholder farms are defined as those farms operating two ha or less
<b>MAAF (2012)</b>	In France is used the notion of “reference unit” which is defined as the size needed to ensure economic viability of the holding, taking into account all its agricultural activities. It is determined at local level, for each small agro ecological area.
<b>Modrego et al (2007)</b>	in this paper they use, as proxy for small farmers, the category "self-employed agriculture"
<b>Murphy (2010)</b>	Overall, smallholder farmers are characterized by marginalization, in terms of accessibility, resources, information, technology, capital and assets, but there is great variation in the degree to which each of these applies (Murphy 2010)
<b>Narayanan and Gulati (2002)</b>	They characterize a smallholder “as a farmer (crop or livestock) practicing a mix of commercial and subsistence production or either, where the family provides the majority of labor and the farm provides the principal source of income”.
<b>National Bureau of Statistics, United Republic of Tanzania</b>	In the Tanzanian official statistics, small scale farms or smallholder households are defined as those having between 25 sq. meters and 20 ha of land under production, and/or between 1 to 50 head of cattle, and/or between 5 and 100 head of goats/sheep/pigs, and/or between 50 and 1 000 chickens/ducks/turkeys/rabbits.

OECD (2015)	“...a defining characteristic of smallholders is that they struggle to be competitive and hence to provide an income to support themselves and their families, they often live in poverty and produce at least part of their product for self-consumption; they also possess limited resource endowments, in particular land, and normally confront missing or under-developed input and output markets.”
OECD (2015)	<b>Brazilian</b> official definition used by the Ministry of Agrarian Development (MAD): “a smallholding or family farm is defined as a production unit managed by the owner, with fewer than four fiscal modules. A fiscal module is a tax-related measure based on the potential income generation from the land, ranging from between 5 and 110 hectares, depending on the geographical area. Moreover a family farm must use principally family labor.”
OECD (2015)	<b>Official definition of Chile:</b> “According to Organic Law of (The Agrarian Development Institute) INDAP the operative governmental definition of smallholders in Chile is: 1) farmers with less than 12 HRB (Hectares de Riego Basico), 2) with farm assets less than USD 150 000, 3) income generated mainly from farm activity and 4) works directly in the farm. The government also considers another differentiating factor to characterize smallholders: the gross value of production (GVP) of each farm unit. Smallholders are defined as those with less than 2 400 UF.”
OECD (2015)	<b>Official definition of Indonesia:</b> “According to Law No. 19/2013 on the protection and empowerment of farmers, smallholders are farmers who operate farms of less than 0.5 hectares. However, this definition is commonly used in the context of food crop farmers. For farmers growing perennial crops (such as oil palm) a smallholder is defined as having less than 2 hectares.”
OECD, (2015)	<b>Mexico:</b> “There is no official definition of smallholders in Mexico, however farmers with less than 5 hectares are considered to fall into that category.”
Rapsomanikis (2015)	In this report the middle-sized farm is used as a threshold to define small farms. The middle-sized farm threshold varies from one country to another. It takes into consideration country specific conditions which shape the size of farms and their distribution and provides information about the typical smallholder farm.
RCI (2004)	For what concerns Côte d’Ivoire agricultural holdings are classified in modern and traditional holdings. According to these two macro categories, the groups are: <ul style="list-style-type: none"> <li>- Large holdings in the modern sector;</li> <li>- Large holdings in the traditional sector (having a minimum specified area under a specific crop);</li> <li>- Small holdings in the traditional sector.</li> </ul>
Sakami, Kamara and Brixiova (2010)	This study defines smallholder farmers according to the land size and number of livestock units approach. In particular,

	smallholdings operate less than 2 ha of land and own only a few heads of livestock.
<b>Small Holding Sector, Preliminary data Release, Department of Census and Statistics of Sri Lanka</b>	<b>Sri Lanka:</b> “smallholdings sector (peasant) are those holdings not falling into the category of estates. An estate or plantation sector is an agricultural holding of 20 acres (8.1 ha) or more in extent. If the different parcels add up to 20 acres, the holding is not considered an estate because the estate should have at least one parcel reaching 20 acres in extent. Similarly, a holding with 20 acres or more of purely paddy land is not considered an estate (Small Holding Sector, Preliminary data Release, Department of Census and Statistics of Sri Lanka). In other words, smallholdings are holdings that have no single parcel of more than 8.1 ha except if it is pure paddy land.”
<b>Sun (2013)</b>	smallholders are defined as those cultivating a land varying from less than one ha to 10 ha (definition for Uganda)
<b>Syngenta Foundation (2010)</b>	Smallholders are defined as those farms operating a land of 2 ha or less
<b>Thapa and Gaiha (2011)</b>	Smallholder farms are defined as those farms operating 2 ha or less
<b>TWN (2008)</b>	Smallholder farms are defined as those farms operating 10 ha or less
<b>UNCTAD (2015)</b>	Smallholder farms are defined as those farms operating 2 ha or less
<b>USDA (2007)</b>	In the United States, farm size is defined by an economic criterion: the “gross product”. In particular, a small family farmer is defined as one that grows and sells between \$1,000 and \$250,000 per year in agricultural products.
<b>World Bank (2003)</b>	Smallholders are those with a low asset base operating less than 2 ha of cropland

## ANNEX B: Household surveys used to test the definitions of small-scale food producers

Country Name	Survey Title	Year	Producing Institute
Albania	Living Standard Measurement Survey	2005	Institute of Statistics of Albania (INSTAT)
Armenia	Integrated Living Conditions Survey	2010	National Statistical Service of the Republic of Armenia
Bolivia	Encuesta de los Hogares	2008	Instituto Nacional de Estadística - Ministerio de Planificación del Desarrollo - Bolivia
Burkina Faso	Enquete Multisectorielle Continue	2014/15	Institut National de la Statistique et de la Démographie - Ministère de l'Economie et des Finances
Cambodia	Cambodia Socio-Economic Survey	2009	National Institute of Statistics
Ecuador	Encuesta sobre Condiciones de Vida	2006	Instituto de Estadística y Censos
Ecuador	Encuesta sobre Condiciones de Vida	2014	Instituto de Estadística y Censos
Ethiopia	Ethiopia Socioeconomic Survey	2013/14	Central Statistics Agency of Ethiopia (CSA) - Ministry of Finance and Economic Development
Georgia	Integrated Household Survey	2014	The State Department for Statistics of Georgia - GEOSTAT

<b>Ghana</b>	Ghana Living Standards Survey	2012/ 13	Ghana Statistical Service (GSS)
<b>Guatemala</b>	Encuesta Nacional de Condiciones de Vida	2011	Instituto Nacional de Estadística - Gobierno de Guatemala
<b>Iraq</b>	The Iraq household socio-economic survey	2007	Organization for Statistics and Information Technology (COSIT) - Ministry of Planning, Government of Iraq
<b>Kenya</b>	Integrated Household Budget Survey	2005/ 2006	Kenya National Bureau of Statistics
<b>Malawi</b>	Third Integrated household Survey	2011	National Statistical Office (NSO) - Ministry of Economic Planning and Development (MoEPD)
<b>Malawi</b>	Fourth integrated Household Survey	2013	National Statistical Office - Government of Malawi
<b>Mali</b>	Enquête Agricole de conjoncture integree aux Conditions de Vie des Menages	2014/ 15	Cellule de Planification et de Statistiques - Ministère du Développement Rural Institut National de la Statistique - Gouvernement du Mali - Direction Nationale de l'Agriculture

<b>Nepal</b>	Nepal Living Standards Survey	2011	Instituto Nacional de Estadística y Geografía
<b>Nicaragua</b>	Encuesta Nacional de Hogares sobre Mediación de Nivel de Vida	2014	National Bureau of Statistics
<b>Niger</b>	National Survey un Household Living Conditions and Agriculture	2011	Survey and Census Division - National Institute of Statistics
<b>Nigeria</b>	General Household Survey	2011/ 12	Instituto Nacional de Estadística y Geografía
<b>Pakistan</b>	Pakistan Social and Living Standards Measurement Survey	2013- 14	Federal Bureau of Statistics - Government of Pakistan
<b>Panama</b>	Encuesta de Niveles de Vida 2008	2008	Instituto Nacional de Estadística - Ministerio de Planificación del Desarrollo - Bolivia
<b>Perù</b>	Encuesta Nacional de Hogares	2010	Instituto Nacional de Estadística e Informática - República del Perú
<b>Perù</b>	Encuesta Nacional de Hogares	2014	Instituto Nacional de Estadística e Informática - República del Perú
<b>Rwanda</b>	Integrated Household Living Conditions Survey	2013	National Institute of Statistics of Rwanda - Ministry of Finance and Economic Planning
<b>Tanzania</b>	National Panel Survey	2012/ 13	National Bureau of Statistics

<b>Timor Leste</b>	Living Standard measurement	2007/08	National Bureau of Statistics
<b>Uganda</b>	The Uganda National Panel Survey	2010/11	Uganda Bureau of Statistics (UBOS)
<b>Uganda</b>	The Uganda National Panel Survey	2013/14	Uganda Bureau of Statistics (UBOS)
<b>Vietnam</b>	Household Living Standards Survey	2010	General Statistics Office (GSO) - Ministry of Planning and Investment

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