Proposed International Definition of Small-scale Food Producers

for Monitoring the Sustainable Development Goal Indicators 2.3.1 and 2.3.2

Prepared by the Office of the Chief Statistician and the Statistics Division, FAO

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Contents

Introduction

Following the adoption of 2030 Agenda for Sustainable Development, the UN Statistical Commission agreed on a list of 232 unique global indicators to track the progress of the 169 targets and 17 Sustainable Development Goals (SDGs). As the custodian agency of 21 SDG indicators, FAO is responsible for collecting, validating and harmonizing data to monitor the progress at sub-regional, regional and global levels, in order to inform the annual progress reports of SDGs, follow-up and review processes of the High-Level Political Forum.

Each Goal is composed of several targets. Goal 2 includes 5 outcome targets and 3 targets on "means of implementation". Target 2.3, one of the outcome targets of SDG 2, aims to double, 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." The progress in achieving this target will be monitored by indicators 2.3.1 and 2.3.2, which are "volume of production per labour unit by classes of farming/pastoral/forestry enterprise size", and "average income of small-scale food producers, by sex and indigenous status", respectively.

These indicators are currently classified as Tier III in the SDGs monitoring framework, as an international methodology for measuring them is not yet agreed among member countries.

The methodology entails three steps. First, the target population must be identified and selected, that is, the "small-scale food producers". Second, the "volume of production per labour unit by classes of farming/pastoral/forestry enterprise size" must be computed. Finally, the "average income of small-scale food producers, by sex and indigenous status" must be calculated.

From a conceptual standpoint, the second and the third of these steps are relatively straightforward, as they are based on a standardized approach. The first step, instead, is more complex, as it requires the adoption of an international definition of "small-scale food producer". This is potentially controversial, as there is a wide variety of definitions proposed and adopted over time in several countries. [1]

This document addresses the first of the three steps outlined above, by proposing an international definition of small-scale food producers. It is submitted as a background document to section V of the Report of the Food and Agriculture Organization of the United Nations on new developments in agricultural and rural statistics for the Forty-ninth session of the UN Statistical Commission, 6-9 March 2018.

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[1] This note relies on the FAO Statistics Division Working Paper on "Defining small-scale food producers to monitor target 2.3. of the 2030 agenda for sustainable development" available at http://www.fao.org/3/a-i6858e.pdf   The Working Paper presents a review of the literature and a set of experiments with different types of thresholds.

A proposal for defining and identifying "small-scale food producers"

The FAO proposes to define small-scale food producers using a combination of two criteria, namely the physical size of the food producer, as expressed by the amount of operated land and number of livestock heads in production, and the economic size of the food producer, as expressed by its revenues. These criteria are applied in relative terms.

In practice, FAO proposes to define small-scale food producers as producers who:

1. *Physical size*

- operate an amount of land falling in the first two quintiles (the bottom 40 percent) of the cumulative distribution of land size at national level (measured in hectares); and

- operate a number of livestock falling in the first two quintiles (the bottom 40 percent) of the cumulative distribution of the number of livestock per production unit at national level (measured in Tropical Livestock Units – TLUs); and

2. *Economic size*

- obtain an annual economic revenue from agricultural activities falling in the first two quintiles (the bottom 40 percent) of the cumulative distribution of economic revenues from agricultural activities per production unit at national level (measured in Purchasing Power Parity Dollars).

A visual demonstration of the definition is provided below.
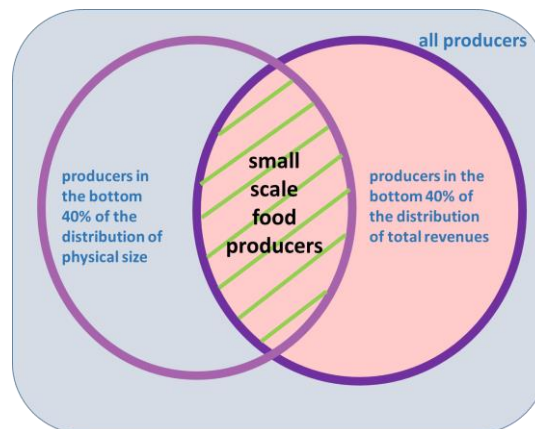
It is important to highlight that **the definition of small-scale food producers" proposed here is only meant to serve the purpose of computing and monitoring SDG indicators 2.3.1 and 2.3.2, and it is not intended to replace country-specific definitions.** National definitions reflect national policy priorities, while the proposed international definition ensures global reporting of the SDG indicators. Therefore countries will be requested to collect data in a way that allows monitoring both national and international definitions.

Definitions of "small-scale food producers" that are found in the scientific literature and in policy documents are mostly based on four criteria: size of operated land, amount of labour input employed for agricultural production (especially of family members), market orientation and economic size[2] of the holding. *Land size* is the most commonly used criterion, as the vast majority of "small-scale food producers" definitions are based on the physical size of the farm and the number of livestock heads. The second main criterion is the *labour* input of the farm. The third criterion is the extent of *market orientation or access of the producers*, which refers to the destination of the output of the farm, either for own-final consumption or for sale and/or barter in markets. A fourth criterion is the *economic size* of the holding, expressed through the gross monetary value of agricultural production.

The Monitoring Framework of the SDGs, as mentioned, refers to the concept of small-scale "food producers". Agricultural producers represent the main target of SDG-2 and for this reason, indicators 2.3.1 and 2.3.2 must be operationalized first and foremost with reference to small-scale agricultural producers.

Why using a combination of two criteria

The choice of relying on land size and the size of herds reflects the aim of capturing structural constraints in production. The assumption is that producers with small endowments of key resources are likely to be disadvantaged vis-à-vis those operating on a larger scale. However, the physical size fails to consider the quality of the land and the livestock, the type of crops grown, 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. As an obvious example, one hectare of specialized horticultural production in high-tech greenhouses in a rich peri-urban area well connected to markets is not comparable to one hectare of cassava in a remote small village.

To overcome these limitations, it is proposed to combine the physical size of the food producer with its economic size, expressed by the revenues from farming activities (revenues from other type of activities, instead, are not be considered). This additional criterion provides a more accurate view and a more precise identification of small-scale food producers compared to land and herds' size only. Consistent with the spirit of target 2.3 of SDG-2, the combination of physical constraints and economic results allows capturing and identifying as small-scale food producers those producers that have limited access to land, resources, input and technology, and obtain poor economic results. The use of revenue as an additional criterion, in other words, reduces the

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[2] See the FAO Statistics Division Working Paper on "Defining small-scale food producers to monitor target 2.3. of the 2030 agenda for sustainable development" available at http://www.fao.org/3/a-i6858e.pdf quoted in footnote 1.

risk of classifying as small-scale food producers who manage to achieve substantive economic results, even from a small resource base.

Information on land size and the number of livestock heads is available in most countries. For this reason, the physical size of farms and herds has frequently been used as a criterion to identify small-scale food producers, especially where data for a more accurate measurement is not available. The economic size criterion has been used in countries with a more comprehensive agricultural statistics programme[3]. Monitoring SGD indicators 2.3.1 and 2.3.2, however, will necessarily require detailed economic data, given the need to compute the income of food producers and the amount of production per labour input. It is therefore justified to include the economic size criterion for developing an accurate definition of small-scale food producers.

One limitation of the revenue as a measure of 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 aimed at measuring income. Moreover, data on costs of production are more difficult to obtain and less frequently collected than data on revenues. Similarly, another limitation that is worth noting 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.

It is also important to underline that the proposed definition of small-scale producers can be applied to fisheries, aquaculture and forestry producers, only to the extent that these activities are conducted in combination with farming activities. The specificities of production in these sub-sectors allow using only the economic revenues, while the other two criteria proposed are not applicable to these particular cases. For what concerns forestry, production happens to a large extent on land which is not owned, nor exclusively accessed by individual households. Thus, measuring the size of land operated by a single farm for forestry-related activities is not straightforward. Similar considerations apply to the fisheries and aquaculture sectors, where variables other than land size and TLUs may be necessary to define the physical size of the holding, such as the number of boats in the case of fisheries.

Why a relative approach to define thresholds

Once a set of criterion variables is adopted to define "small-scale food producers", the issue remains of choosing a convenient threshold that separates small-scale producers from other producers. Thresholds can be based on an absolute or a relative definition.

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[3]See the FAO Statistics Division Working Paper on "Defining small-scale food producers to monitor target 2.3. of the 2030 agenda for sustainable development" available at http://www.fao.org/3/a-i6858e.pdf quoted in footnote 1.

An absolute definition assigns, for each criterion variable, the same exact threshold in all countries – say, for instance, 5 hectares, 5 livestock heads and 1000 $ of revenue -- regardless of agro-ecological and socio-economic conditions.

A relative definition, instead, sets thresholds at the same point *in the cumulative distribution* of the three variables; examples are any percentile of the distribution of land, herds and revenues in each country.

With the relative approach, thresholds are established with a unique criterion, whose application yields different thresholds in each country, depending on the shape of the distribution of the criterion variables. Depending on the distribution of land, livestock heads and revenues in a given country, therefore, thresholds that identify small-scale food producers can be, for example, 5 hectares in one country and 10 hectares in another; or 3 livestock heads in one country and 6.5 livestock heads in a another; or 1,500 $ in one country and 2,800 $ in another.

The absolute approach has the advantage of enhancing comparability across countries. 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. However, this approach makes it difficult and somewhat arbitrary the identification of unique thresholds and disregards differences among national contexts. For instance, a 5-hectare land size may capture virtually all producers in a country where natural conditions and the organization of production determine a small average farm size. However, the same threshold may be capturing a negligible share of producers in countries where the average farm size is much larger.

The relative approach, instead, identifies producers in each country who are *relatively disadvantaged* in terms of access to land, availability of livestock and economic revenues with a homogeneous criterion. This approach reflects more effectively the differences in agro-ecological, demographic, economic and technological characteristics that shape the distribution of land, herds and revenues in each country[4].

Moreover, for the purpose of monitoring SDG indicators 2.3.1 and 2.3.2, the relative approach shows another key advantage over the absolute approach. If defined by an absolute threshold, the composition of the small-scale producers group will inevitably change over time, and more likely decrease in size. The best performing producers will "graduate" to a non-small-scale condition, while the worst performing producers will not; and some bad performers may enter the small-scale's group. An absolute threshold, in other words, would generate an adverse selection bias, which would lead to monitor the worst performers. This may yield paradoxical results. For instance, a country in which the number of small-scale food producers would be

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[4] See the FAO Statistics Division Working Paper on "Defining small-scale food producers to monitor target 2.3. of the 2030 agenda for sustainable development" available at http://www.fao.org/3/a-i6858e.pdf quoted in footnote 1.

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. With a relative threshold, instead, that same country would report progress, as the improvements of producers' access to land, herds and revenues would affect the distribution of these variables, and thus signal the changed conditions of producers located in the designated part of the distribution.

Given these consideration, **it is proposed here to set thresholds using a relative approach**. The three criterion variables – land size, herd size and economic revenue – are used to identify as 'small-scale' those producers that fall in the bottom 40% of the cumulative distribution.

The proposed definition has the advantage of maintaining comparability among countries, in the spirit of the 2030 Sustainable Development Agenda, as all thresholds are computed on the basis of the same statistical criteria. At the same time, the proposal acknowledges the wide diversity of national contexts in which small-scale food producers operate, which results in country-specific thresholds.

The choice of the bottom 40%, as many relative and absolute thresholds, is somewhat arbitrary[5]. However, the bottom 40% -- or two quintiles of the distribution – is consistent with experts' recommendations[6], and with common practices. For example, it is used by the World Bank in its measurement of Shared Prosperity.

As mentioned, it is worth underlying again that the proposed definition aims to facilitate the monitoring of SDGs indicators 2.3.1 and 2.3.2. As such, it is expected to coexist with any other national definitions of small-scale food producers – or other policy-relevant groups such as family farms that reflect national priorities.

The reaction of member countries to the proposed definition

The proposed definition and the associated method to identify "small-scale food producers" was submitted to member countries through a mechanism put in place by UNSD and endorsed by the Chairs of the IAEG-SDG in August 2017. Feedback was received from 58 national and regional institutions. Among the respondents, 24 offered positive comments, either fully agreeing with the definition proposed by FAO or suggesting some refinements of the methodology. Several countries provided neutral comments, such as a description of the definitions currently in use in their countries, or general comments on the SDG target and the indicators. Only two countries openly rejected the methodology, arguing that the approach was oversimplified, and/or unable

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[5] This is also the case, for instance, of the 2-hectare threshold, which is the most popular criterion for identifying smallholders worldwide – see the paper quoted in footnote 1.

[6] See the FAO Statistics Division Working Paper on "Defining small-scale food producers to monitor target 2.3. of the 2030 agenda for sustainable development" available at http://www.fao.org/3/a-i6858e.pdf quoted in footnote 1.

to capture the specificities of farming systems in some specific country contexts. Another four argued that the methodology was unsuitable for implementation in their countries. Finally, some countries suggested alternative criteria to be explored.

A valid concern expressed by more than one country is that the identification of the population of small-scale food producers should not only indicate an upper threshold, but also a lower bound. The absence of a lower bound would result for many countries in the inclusion of "hobby farms" or other non-professional agricultural activities in the set of small-scale producers. In fact, it is impossible to define a unique criterion for setting such lower bound, as the presence and the characteristics of "hobby farms" is highly context-specific. For instance, in some countries the lower bound for considering an activity as "professional" is a revenue of 1000 USD per year. In other poorer countries, the application of such lower bound would actually exclude from the set of small-scale food producers poor farmers, fisherman and forester who would deserve much attention under SDG 2.3. The only possible solution to this problem seems to be a country-specific lower bound. This would allow national policy-makers an appropriate selection of the target population.

After the consultation, and particularly at the 6th IAEG-SDG in November 2017, a number of countries argued that the methodology had not been yet tested extensively enough; especially on high income countries. It should be noted that, during the global consultation, all countries were invited to provide their own estimates based on the proposed definition, but to no avail. As a result, **FAO was only able to test the definition on countries for which relevant micro-data are available in the public domain (mostly** data from the Living Standard Measurement Study of the World Bank). Results are reported under the following section.

In order to address the concerns expressed by the IAEG-SDG, since November 2017 FAO has reached out to several developed countries, including those who were initially critical of the proposed international definition, requesting them to test the definition with their own data. Countries may do so either by sharing the necessary micro-data with FAO or by undertaking the computations themselves. Unfortunately, despite most of these countries initially expressed their eagerness to collaborate in these tests, as of the end of February 2018 FAO has received data only for one higher-income country (Romania).

It should be further noted, that apart from the need for more testing and the issue of the lower bound, none of the comments received from member countries so far has offered concrete proposals for an alternative approach, nor did any significant consensus emerge around a way to amend the proposed definition. Altogether, the results of the consultation led the custodian agency to conclude that the proposed definition constitutes a viable option for monitoring the SDG indicators 2.3.1 and 2.3.2. Detailed results of the consultation and replies to the main comments received are reported in Annex 3.

Implementing the Proposed Definition

Computing the physical size

The amount of land available to an agricultural producer must be considered in terms of the "*operated*" land. This is defined as the amount of land effectively used; it includes the land that is cultivated with temporary and permanent crops, the land rented in, and fallow land (that is, the areas left uncropped at the time of data collection, and not dedicated to grazing). Excluded from the operated is the land rented out, the forestland and the land abandoned prior to the reference period. Where information on land use is incomplete, for instance data on fallow land is often unavailable, data on "*cultivated*" land should be used instead.

Computation of the threshold of the bottom 40% of operated land size distribution is done by first creating a variable that is the cumulative distribution of the operated land size. From this variable, the point that corresponds to the 40% of the cumulated distribution is identified. This point is chosen as the threshold that separates the bottom 40% from the top 60%. Producers included in the bottom set constitute those who fulfill the first criterion.

The second criterion of the physical size is the size of livestock holdings of the food producers. The number of livestock available to a producer must be considered in terms of Tropical Livestock Units (TLUs). This is a conversion scale developed by FAO for global comparisons, which standardizes different livestock types in a single measure through conversion factors valid for specific livestock varieties in each region of the world. The mean of comparison is the basal metabolic rate, which is the energy expenditure per unit of body weight per unit time[7].

Finding the bottom 40% of the TLU distribution requires the same methodology applied above for the operated land. The cumulative distribution of the TLUs of the country is considered, to find the point that corresponds to the 40% of the cumulated distribution. This is identified as the bottom 40% threshold. Producers included in the bottom set constitute those who fulfil the second criterion.

In addition to these criteria, each national statistical system, depending on the specific conditions, may consider establishing a *minimum size* of land and/or livestock that separates hobby farming, gardening and other non-productive activities from small-scale food production.

Computing the economic size

Revenues from agricultural activities include those generated by crop, livestock fisheries, aquaculture and forestry. Given *i* agricultural activities, including crops, livestock, fisheries and forestry activities, for each producer *k*, revenues can be written as

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[7] Information on the TLU is available at www.fao.org/Wairdocs/ILRI/x5443E/x5443e04.htm

$$R_k^t = \sum_k V_{ik}^t p_{ik}^t$$

where:

- V_{ik}^t is the physical volume of agricultural product *i* sold by producer *k* during year t;
- p_{ik}^t is the constant selling price received by the small-scale food producer *k* for the agricultural product *i* during the same year t.

In details, physical volumes V_{ik}^t are derived, for each *k* producer, from the following items.

- Crop revenues: crop sold, crop for own consumption, crop used as feed, crop saved for seed, crop stored, crop used for by-products, crop given as gift, crop used for paying labour, crop used for paying rent, crop used for paying inputs, crop given out in sharecropping agreement (sharecrop out), crop wasted. Similar criteria apply for the computation of revenues from tree crops and forestry products.
- Livestock revenues: livestock sold (alive), livestock gifts given away (component can only be kept if stock variation is possible to construct), livestock by-/products sold, livestock products self-consumed, livestock by-products self-used (also a cost in crop, for example dung used as fertilisers), livestock by-/products pay away, livestock by-/products credit away.
- Forestry revenues: products sold, forestry products for own consumption, forestry products stored, forestry products used for paying labour, forestry products used for paying rent, forestry products used for paying inputs, forestry products given out in sharecropping agreement, Forestry products wasted.
- Fisheries revenues: captured fresh fish sold, captured processed fish sold, captured fresh fish for own consumption, captured processed fish for own consumption, traded fresh fish sold, traded processed fish sold.

Significant difficulties are likely to arise in the identification of p_{ik}, that is, of a vector of constant prices to be attributed to each of items listed. First, detailed data on selling prices at the farm level are not always available. When they are not, convenient proxies need to be identified for the closest available territorial entity, such as median prices referred to the same district, province or even at the national level. Second, for all the items which are not sold in the market -- such as own-consumed products or products used for in-kind payment and barters -- market prices do not apply. A correct evaluation would require an assessment of the shadow prices for each such item, indicating their opportunity cost, which are heavily dependent upon context-specific conditions. In fact, it looks unlikely that the computation of revenues of a large sample of producers, such as the one required in this case, can rely on credible and detailed shadow prices. Thus, market prices are likely to be used as proxies in this context.

To maintain comparability of the revenues across countries, all values in local currency units need to be converted in Purchasing Power Parity Dollars (PPP $)[8].

As mentioned, fisheries, aquaculture and forestry producers can only be considered in this context in terms of the second criterion, that is, the economic size. In addition to the complexity of the statistical operationalization of physical constraints in forestry, fisheries and aquaculture, additional constraints in these sub-sectors originate from the lack of consistent accessible data.

The computation of the threshold for the economic size criterion is the same as that of the physical size. A variable is generated that takes the cumulative distribution of revenues in the countries. The point that is at the 40 per cent of the cumulative distribution is identified, and this number is applied as the threshold for economic size – the producers which have revenues that are less than this number creates the third set of producers that fulfil the final criterion of the definition. Both the physical and the economic criteria must be satisfied if data is available.

Results of the application of the proposed international definition of small-scale food producers in selected countries

The proposed criterion for identifying small-scale food producers and the computation of the SDG indicators 2.3.1 and 2.3.2 were tested on a sample of 29 countries, using micro data collected in 41 household surveys and processed in the framework of the RuLIS initiative[9].

The table below shows the thresholds corresponding to the bottom 40 per cent of land size, herd size and revenue from farming activities. For eight of the 29 countries – Ecuador, Ethiopia, Georgia, Malawi, Niger, Peru, Tanzania and Uganda – the threshold could be computed for more than one similar survey in close-by years. In these cases, it was possible to check on how the thresholds for identifying small-scale food producers, and how the associated percentages of small-scale food producers changed in different time periods.

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[8] Information available at: http://data.worldbank.org/indicator/PA.NUS.PPP It must be noticed that this conversion is necessary for measuring progress in the SDG indicators 2.3.1 and 2.3.2, but it is not strictly necessary for the identification of the small-scale food producers. The reason is that the cumulative distribution of the revenues will not change with the conversion. The subset of farmers falling in the bottom 40 percent of the cumulative distribution of the revenues, in other words, will not change with the conversion of the currency to PPP Dollars or any other unit.

[9] A practical example on how to identify smallholders and compute the two proposed indicators is provided in Annex 2, referring to a hypothetical country named Smallscalestan.

Thresholds based on the proposed definition, corresponding to the bottom 40 percent of the cumulative distributions of land, TLUs and Revenues

	Land size (ha)	Tropical Livestock Units (number)	Revenues (PPP $)
Armenia 2013	2.00	3.10	7397
Bangladesh 2010	1.03	1.61	2622
Bolivia 2008	3.04	5.93	4815
Burkina Faso 2014	4.00	N.A.	1319
Cambodia 2009	2.10	N.A.	2812
Cote d'Ivoire 2008	11.00	3.72	6120
Ecuador 2006	6.40	9.22	4268
Ecuador 2014	5.00	8.35	4690
Ethiopia 2013	1.40	3.05	1078
Ethiopia 2015	1.63	3.72	1448
Georgia 2013	0.91	N.A.	2225
Georgia 2015	1.00	N.A.	2738
Ghana 2013	3.04	2.88	5826
Guatemala 2014	0.81	1.15	33964
India 2012	1.62	1.05	4411
Iraq 2012	5.00	N.A.	12914
Kenya 2005	1.01	2.81	5398
Kyrgyzstan 2013	2.10	3.60	7205
Malawi 2004	1.02	1.07	1550
Malawi 2011	0.83	1.18	648
Malawi 2013	0.81	1.15	833
Mali 2014	7.29	7.00	3353
Mexico 2014	N.A.	N.A.	10006
Mozambique 2009	1.80	1.56	5563
Nepal 2011	2.70	3.10	2474
Niger 2011	6.50	3.38	1848
Niger 2014	6.40	3.30	1700
Nigeria 2016	1.49	3.90	1898
Pakistan1 2014	2.43	N.A.	10911
Peru 2010	3.30	7.55	6796
Peru 2014	2.62	7.25	5227
Peru 2015	2.00	7.12	4602
Rwanda 2013	1.85	1.00	773
Sierra Leone 2011	1.94	2.70	2372
Tanzania 2009	2.20	4.91	1628
Tanzania 2011	2.98	6.10	1546
Tanzania 2013	2.40	7.80	1833
Timor Leste 2007	0.90	3.16	4535
Uganda 2009	3.20	3.20	2880
Uganda 2012	2.83	2.90	1939
Uganda 2013	2.26	2.00	1551

Source: RuLIS initiative, provisional data. Own calculation on data from surveys listed in Annex 1

Despite the limited sample, thresholds show significant variability across countries. A small-scale food producer in Mali or Niger operates up to 7 or 11 hectares; while in Timor-Leste a small-scale producer operates less than 0.9 hectares. In terms of revenues, in Malawi the threshold for being considered a small producer corresponds to less than 1000 PPP$, while it is close to 10,000 PPP$ in Mexico. The list of the surveys employed is provided under Annex 1.

Percentages of small-scale food producers in selected countries, based on the proposed criterion
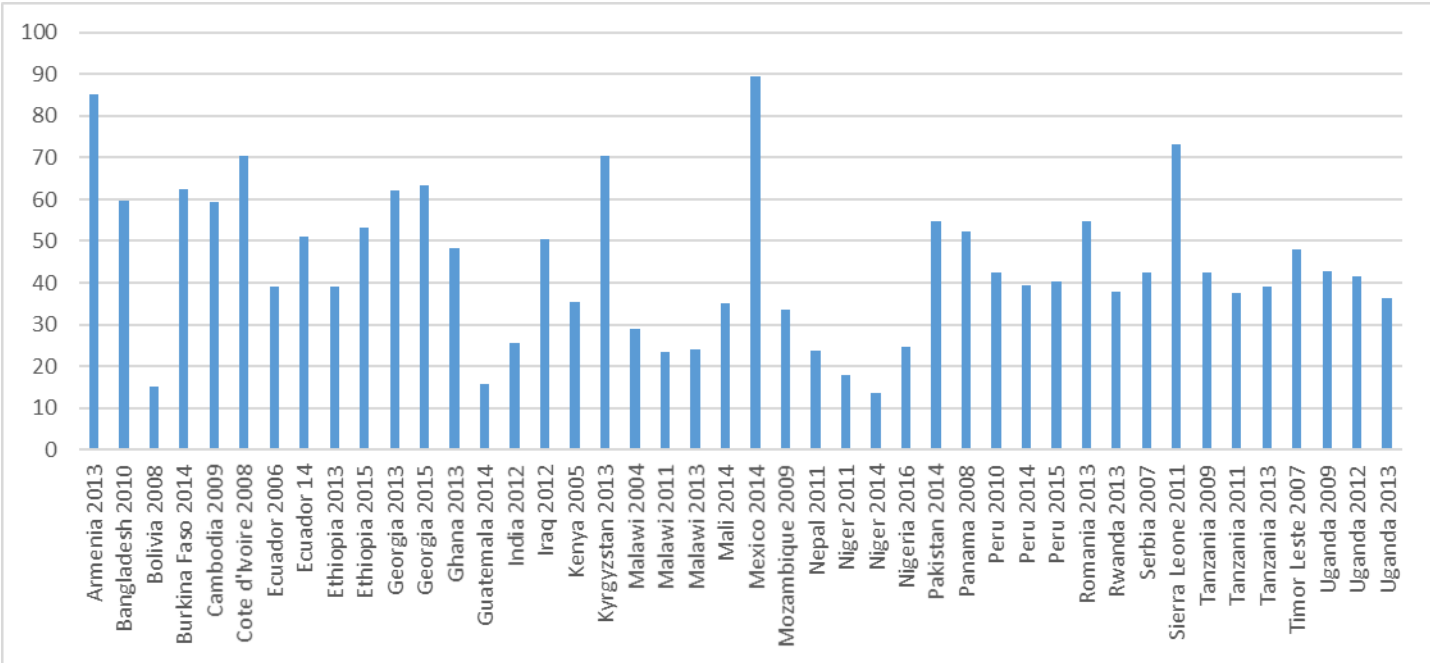
Source: RuLIS initiative, provisional data. Own calculation on data from surveys listed in Annex 1

The percentages of small-scale food producer resulting in each country are reported in the chart above. In the selected surveys, the incidence of small-scale food producers in total food producers varies from 13 per cent in Nepal up to 90 percent in Mexico and about 85 percent in Armenia. In several countries, however, this percentage seems to identify some 40 to 65 per cent of total agricultural producers.

This relatively wide variability of results across countries is probably due to the use of three different variables – revenues, land and livestock units -- whose distributions can take very different shapes. Hence the intersection of the sets of producers identified in each of the three distributions is hard to predict. In this respect, single-variable criteria may yield more stable results in terms of percentages across countries. However, the advantage of the multiple criterion is expected to be a higher accuracy in identifying small-scale producers.

Moreover, experiments conducted with different thresholds on the same pool of data showed that the proportion of small-scale food producers does not change significantly with respect to the data obtained here.

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Annex 1: List of surveys used for the calculations reported

Country	Survey	Year	Institution
Armenia	Integrated Living Conditions Survey	2010	National Statistical Service of the Republic of Armenia
Bangladesh	Household Income-Expenditure Survey	2010	Bangladesh Bureau of Statistics
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
Cote d'Ivoire	Enquete Niveau de Vie des Menages	2008	Institut National De La Statistique (INS) - Ministere d'Etat, Ministere du Plan et du Developpement
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
Ethiopia	Ethiopia Socioeconomic Survey	2014/15	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
Georgia	Integrated Household Survey	2015	The State Department for Statistics of Georgia - GEOSTAT
Ghana	Ghana Living Standards Survey	2012/13	Ghana Statistical Service (GSS)
Guatemala	Encuesta Nacional de Condiciones de Vida	2011	Instituto Nacional de Estadística - Gobierno de Guatemala

Country	Survey	Year	Institution
India	India Human Development Survey	2012	National Council of Applied Economic Research, New Delhi
Iraq	The Iraq household socio-economic survey	2007	Organization for Statistics and Information Technology (COSIT) - Ministry of Planning, Government of Iraq
Kenya	Integrated Household Budget Survey	2005/2006	Kenya National Bureau of Statistics
Kyrgyzstan	Integrated sample household budget and labor survey	2013	National Statistics Committee
Malawi	Third Integrated household Survey	2004	National Statistical Office (NSO) - Ministry of Economic Planning and Development (MoEPD)
Malawi	Third Integrated household Survey	2011	National Statistical Office (NSO) - Ministry of Economic Planning and Development (MoEPD)
Malawi	Fourth integrated Household Survey	2013	National Statistical Office - Government of Malawi
Mali	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
Mali	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
Mexico	Encuesta Nacional de Ingresos y Gastos de los hogares	2014	Instituto Nacional de Estadística y Geografía
Mozambique	Inquérito sobre Orçamento Familiar	2008	Direcção de Censos e Inquéritos - Instituto Nacional de Estatística (INE) - Ministry of Planning and Development
Nepal	Nepal Living Standards Survey	2011	Instituto Nacional de Estadística y Geografía
Niger	National Survey un Household Living Conditions and Agriculture	2011	Survey and Census Division - National Institute of Statistics

| Country	Survey	Year	Institution
Niger	National Survey un Household Living Conditions and Agriculture	2014	Survey and Census Division - National Institute of Statistics
Nigeria	General Household Survey	2016	Federal Statistics Office
Pakistan	Pakistan Social and Living Standards Measurement Survey	2013-14	Federal Bureau of Statistics - Government of Pakistan
Perù	Encuesta Nacional de Hogares	2010	Instituto Nacional de Estadística e Informática - República del Perú
Perù	Encuesta Nacional de Hogares	2014	Instituto Nacional de Estadística e Informática - República del Perú
Perù	Encuesta Nacional de Hogares	2015	Instituto Nacional de Estadística e Informática - República del Perú
Romania	Farm Structure Survey (FSS)	2013	Eurostat
Rwanda	Integrated Household Living Conditions Survey	2013	National Institute of Statistics of Rwanda - Ministry of Finance and Economic Planning
Sierra Leone	Integrated Household Survey 2011	2011	Statistics Sierra Leone (SSL)
Tanzania	National Panel Survey	2008/09	National Bureau of Statistics
Tanzania	National Panel Survey	2012/13	National Bureau of Statistics
Timor Leste	Living Standard measurement	2007/08	National Bureau of Statistics
Uganda	The Uganda National Panel Survey	2009/10	Uganda Bureau of Statistics (UBOS)
Uganda	The Uganda National Panel Survey	2010/11	Uganda Bureau of Statistics (UBOS)
Uganda	The Uganda National Panel Survey	2013/14	Uganda Bureau of Statistics (UBOS)

Annex 2: An Example of computation of SDG indicators 2.3.1 and 2.3.2 in Smallscalestan

This annex shows how the proposed international definition of small-scale food producers can be implemented in an example from a hypothetical country, which will be called Smallscalestan.

The three charts below present the distribution of the three relevant variables – land area, herd size and revenues – while the dashed line is the threshold at the point that corresponds to the bottom 40 per cent of each distribution. For this particular country, the threshold is 2.64 hectares of land size in Smallscalestan.

Distribution of land
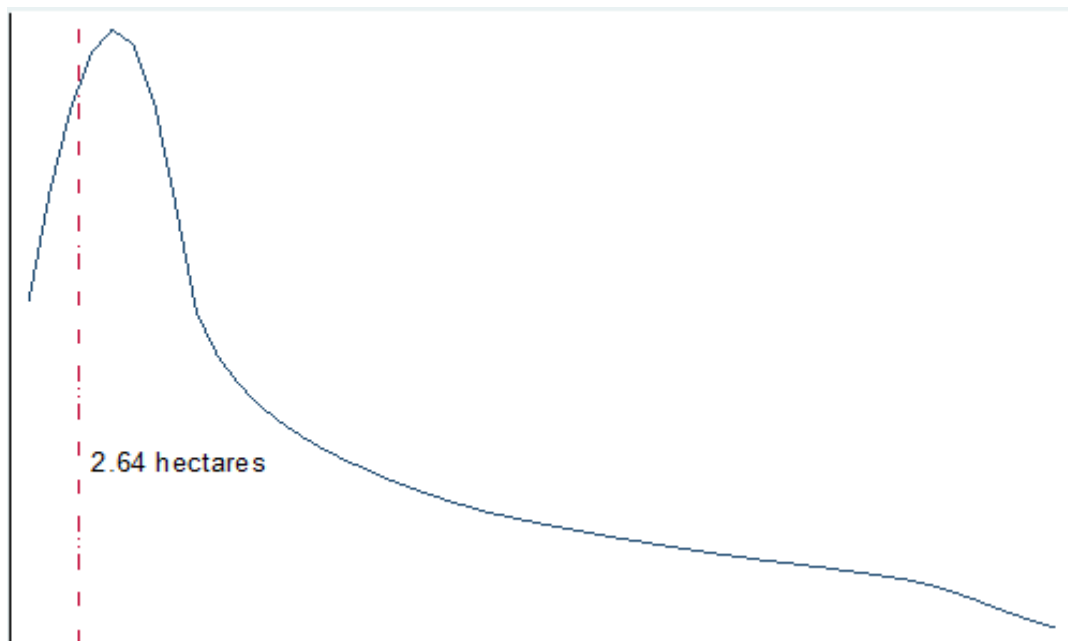
The distribution of the herd size in terms of TLUs, presented in the chart below, shows that the threshold identifying the bottom 40 per cent, is at 4.4 TLUs in Smallscalestan.

Distribution of livestock herds

4.40 TLUs
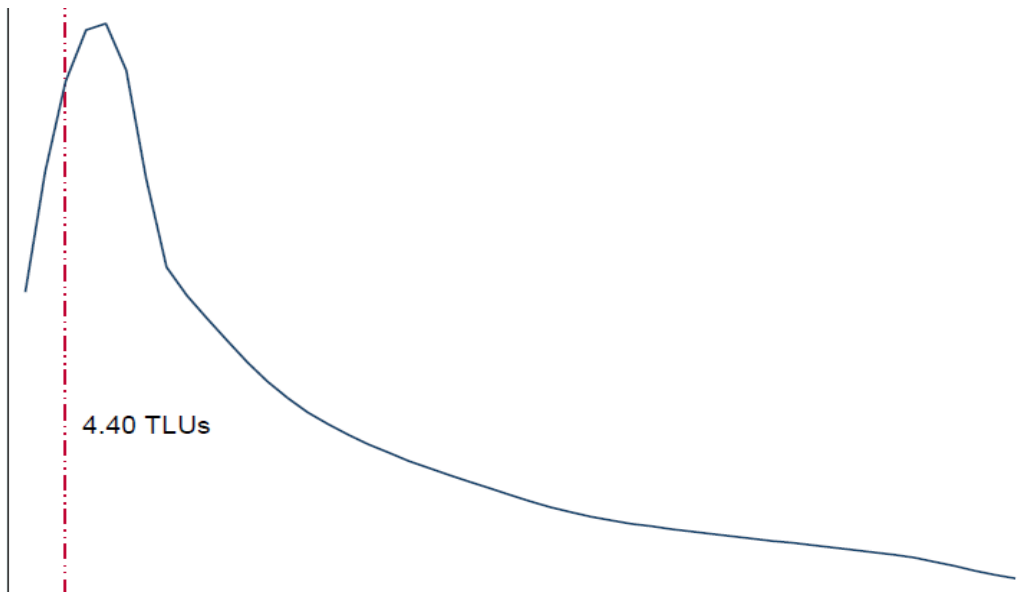
Finally the chart below shows the distribution of the farm revenues in Smallscalestan. The threshold that separates the bottom 40 per cent in this case is PPP $4617.

Distribution of revenues

$4617

The Table below offers a numerical example on how the three thresholds would be used to identify small-scale food producers.

Table 2: A random selection of 50 households from the hypothetical country "Smallscalestan"

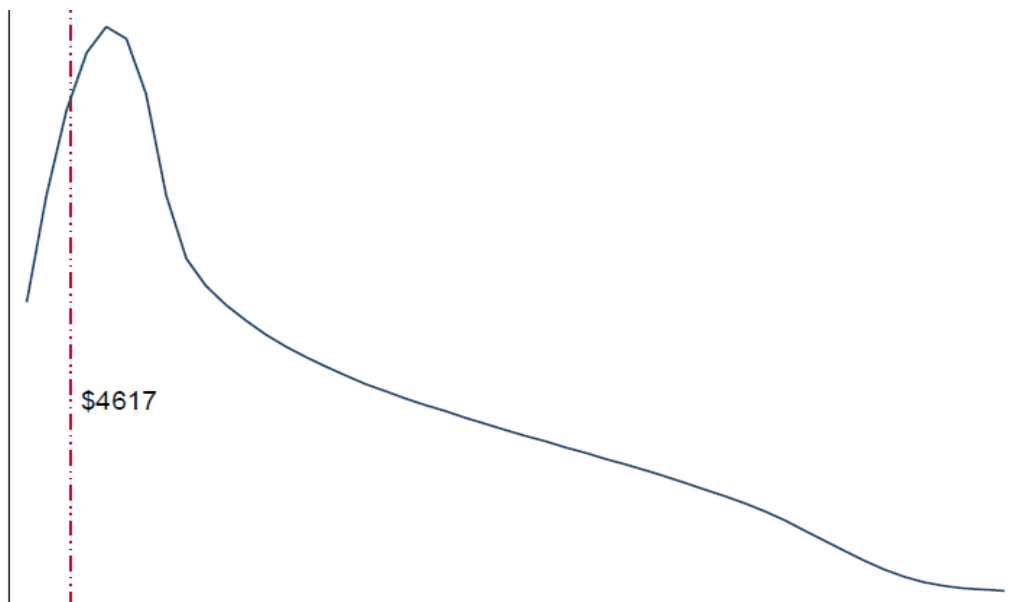| Household Number	Operated Land Area (ha)	TLUs (number)	Revenues from crops ($ PPP constant prices)	Revenues from Livestock ($ PPP constant prices)	Revenues from fisheries ($ PPP constant prices)	Revenues from forestry ($ PPP constant prices)	Total Revenues ($ PPP constant prices)	small-scale
HH1	2.91	5.4	2912	2261	321	-	5,493	
HH2	1.12	1.6	746	442	-	-	1,188	green
HH3	2.89	5.7	3292	2566	-	523	6,380	
HH4	4.07	4.4	3885	2257	-	-	6,141	
HH5	0.2	4.2	2586	3715	-	265	6,565	
HH6	1.73	5	813	1279	-	-	2,091	
HH7	0.2	12	463	4743	-	-	5,205	
HH8	0.51	1.5	195	342	-	-	536	green
HH9	6.5	3.5	1103	223	-	-	1,325	
HH10	3.56	4.6	4599	3453	-	-	8,052	
HH11	3.19	10.7	1010	2417	-	-	3,426	
HH12	2.44	2	1268	243	-	187	1,697	green
HH13	0.36	1.9	715	1130	-	-	1,844	green
HH14	0.08	1.3	587	1004	-	-	1,591	green
HH15	3.36	1.7	3364	1305	-	-	4,668	
HH16	6.97	5.1	5213	1524	1,064	-	7,800	
HH17	2.95	4.5	2965	2270	-	2,450	7,684	
HH18	1.88	1.5	1600	651	-	-	2,251	green
HH19	6.74	5.1	4147	642	-	-	4,788	
HH20	2.46	1.2	1451	377	-	450	2,277	green
HH21	0.13	0.1	187	120	-	-	306	green
HH22	1.53	0.5	661	-379	-	-	282	green
HH23	4.92	5	4120	2034	-	-	6,153	
HH24	0.7	2.7	356	795	-	-	1,151	green

HH25	4.02	2	3884	1408	-	-	5,292	
HH26	3.39	2.89	4014	1637	1,834	-	7,485	
HH27	6.73	1.7	5033	278	-	-	5,310	
HH28	3.02	0.5	2112	-120	-	-	1,992	
HH29	4.93	6.4	4516	2940	-	-	7,455	
HH30	0.2	1	515	725	-	-	1,239	
HH31	1.32	1.5	1566	1065	-	-	2,631	
HH32	4.73	5.3	2942	2011	-	892	5,844	
HH33	3.38	4.7	3799	2834	-	-	6,633	
HH34	0.46	1.7	342	603	-	-	944	
HH35	6.72	6.5	2500	701	1,952	-	5,153	
HH36	2.9	4,9	3001	2494	-	-	5,495	
HH37	3.97	5.5	3509	2368	-	-	5,877	
HH38	2.97	5.1	3145	2656	-	-	5,800	
HH39	2.41	4.3	896	559	-	-	1,455	
HH40	0.41	1.5	639	866	128	-	1,633	
HH41	3.3	4.8	3116	2252	-	-	5,368	
HH42	5.65	8.9	4219	2992	-	-	7,210	
HH43	3.05	6.2	4197	4051	-	-	8,248	
HH44	0.83	6.5	1481	3222	-	-	4,702	
HH45	0.51	2.5	2510	3027	-	-	5,536	
HH46	2.79	8.5	3380	4293	-	-	7,673	
HH47	1.83	3.9	1616	1595	-	-	3,211	
HH48	0.2	7,3	1088	3629	-	-	4,716	
HH49	2.16	3.6	1348	1625	-	673	3,646	
HH50	4.86	6,2	3191	1597	-	-	4,787	

The cells highlighted in yellow show the households that satisfy only one or two conditions. Those highlighted in green show the households that are categorized as "small-scale food producers" according to the present methodology, with the combination of the three criteria.

Annex 3: Detailed results of the consultation of member countries on the proposed definition of "small-scale food producers, August-October 2017"

As mentioned in the main section of this document, FAO and the UNSD have asked UN member countries to provide feedback on the international definition of "Small-Scale Food Producer" proposed by FAO and the associated detailed methodology for identifying the target population of SDG indicators 2.3.1 and 2.3.2. To this end, FAO and UNSD submitted to UN member countries a technical note through the IAEG-SDG, in August 2017. The Note was circulated on 14 August 2017, asking member countries to send feedback no later than 11 September 2017. This deadline was subsequently extended to 25 September 2017.

A total of 58 national and regional institutions sent their feedback by 1st of October 2017. Among the respondents, 18 provided positive feedback, agreeing with the definition proposed by FAO.

Only very few respondents – 2 or 3 -- openly rejected the methodology as inappropriate. They argued that that the approach was oversimplified, unsuitable for one or more specific countries, and/or unable to capture the specificities of farming and farming systems in some specific countries or areas. In this respect, it should be noted that any international statistical definition will inevitably have to address a trade-off between international comparability and the ability to capture countries' specificities. In the one proposed by FAO this trade-off is addressed: the relative approach, which generates country-specific thresholds for the three criterion variables, maintains a large degree of country-specificity; while at the same time the homogenous threshold in the cumulative distribution of the same variables addresses the need to maintain international comparability. It should also be recalled -- as mentioned in the Introduction and in the main section -- that the proposed definition is not supposed to replace any national definition, which is obviously geared to better capture national specificities.

One of the comments received suggested to follow the approach of the FAO Guidelines on Small-Scale Fisheries, which essentially corresponds to having each country using its national definition. While this would certainly accommodate all country specificities, it would somehow clash with the spirit of the SDG monitoring, which entails comparability of results across countries.

Another point made in some of the more critical comments was that the proposed methodology might include among small-scale hobby farmers or farmers whose main income is derived from non-agricultural activities. This is very valid point. However, it is hard to address the matter through an international definition. The exclusion of hobby farmers should probably be taken care of at the national level, for instance by excluding from those farmers – or food producers – from a reference population, so that the target population includes only those who produce on a professional basis. Concerning the importance of non-agricultural income in the total income of small-scale farmers, this is indeed quite evident in the data of several countries. It should be noted here though, that the choice of referring only to agricultural income in the monitoring of Indicator 2.3.2 stems from the focus of Target 2.3, which is agriculture and food production rather than poverty *per se*. The labour productivity and income that are targeted for doubling by 2030 seem to be those of *food production*, and not total income and overall productivity, which seems to be the focus of SDG 1.

Several respondents –about 10 to 12 -- agreed with the general thrust of the methodology proposed, but suggested possible changes, amendments and refinements. For instance, it was suggested the use of classes to identify thresholds in the three criterion variables, rather than points in the cumulative

distribution. Some suggested the use of additional criterion variables --such as poverty and income distribution related indicators -- or that the small-scale condition be somehow product-specific. Some respondents argued that the 40 percent threshold was too low, other that is was too high. These are all valid and useful comments, which appear, however, difficult to implement in an international definition. A combination of additional criteria, beyond the three proposed, may indeed improve the identification of the target population in some countries, but it may also create additional biases in other countries. In the same line, the placement of the threshold at a different percentage of the cumulative distribution will inevitably still trigger similar comments.

In this same group of comments, more than one respondent argued that the proposed methodology demands a significant amount of detailed data, which is in fact not available. This is also a very valid point. However, it should be noted that the proposed methodology for identifying small-scale producers demands the same type of information and the same level of detail required by the monitoring of the SDG indicators 2.3.1 and 2.3.2. In this respect, the lack of suitable data is an issue that has to be addressed independently from the characteristics of the definition of the small-scale producer, if the monitoring of the SDG 2.3 has to be undertaken.

A large number of respondents – more 20 -- offered comments that are either neutral with respect to the proposed methodology, or not directly related to it. More than one respondent described the definitions in use in their countries; the specific units of measurement in use for income, land and labour; the specific national definition in use in certain countries and areas – such as those employed in EU Regulations; the limitation of the SDG 2.3 target and indicators with specific reference to certain countries. While all these are all useful and interesting comments, they did not seem to question the appropriateness of the proposed definition.

In fact, there seem to be no consensus emerging around an alternative proposals for deriving an international definition, or for better addressing the mentioned trade off that exist between the need to maintain international comparability while capturing, to the extent possible, local specificities; nor did significant consensus emerge on a way to amend the definition proposed.

Altogether, despite the many limitations and drawbacks of the proposed definition, these results led the custodian agency to conclude that what was proposed constitutes a viable option for monitoring the SDG indicators 2.3.1 and 2.3.2.

Detailed results of the consultation and replies to the main comments received are reported in the table below.

#	Country	Positive	Neutral	Criteria ok, details to be revised	Negative			Other
					Definition is wrong	Unsuitable for my country	Proposes changes of criteria	
1	Switzerland					Threshold seems too large to solely cover smallest units in Switzerland, further tests should be made for European countries.	Consider also the following possible criteria: 1. use the 3 x 40 percent threshold in combination with Gini index; 2. try graduation / classes: 0-10, 10-20, 20-30, 30-40… or risk classes: very poor/disadvantaged – poor/ disadvantaged – at big risk – probably at risk… 3. introduce at least one new condition (4th dimension): revenue per household unit (or/and per work unit, depending on available data) < national (or regional) minimum wage or poverty level (or something approaching, eventually in PPP).	
2	Turkey	Agrees with the definition.						
3	United republic of Tanzania							The definition proposed is not consistent with our national definition. Describes the national definition

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#	Country							
4	Qatar	Definition is good enough for measuring progress in SDG indicators 2.3.1 and 2.3.2.						
5	Georgia		No comment.					
6	Slovenia						Suggests to use average income by classes of utilized agric. area / number of animals / income size.	
7	India	Agrees and supports the proposed definition.						
8	Slovakia	Supports the definition.						Only very small farmers (self-subsistence farmers) - who produce an agricultural output only for their own consumption - will meet this criteria. Usually family members have their own job (for example as employees in various companies) and they work at the farms in their free time. So their main revenue comes from their regular employer not from the farming activity. Their income from the agricultural activities is not subject to any statistical survey. Therefore it will be very difficult to include this economic size of farm into the real implementation of the proposed definition. In that case, a good tool for setting up the economic size of the farm can be using of the SO coefficients.

9	New Zealand		Reports results of the proposed definition applied on NZ data.					
10	Lithuania			Threshold is too high.				More information is necessary on how to estimate revenues of farms from fisheries and forestry.
11	Belgium				Definition is narrow, oversimplified	Belgium has more detailed TLUs and express the economic dimension or size of a farm by its total standard gross production		Criticizes the targets and the indicators
12	Romania						Proposes that the criterion concerning the economic size of agricultural holding	Describes the EU definition in use in the country.
13	European Union	The FAO proposal is acceptable						Currently there is no EU definition of small-scale food producer. In case sufficient data available, it is worth to include fishing, aquaculture and forestry activities.
14	Poland							Cannot adopt the criterion, as there is no survey to collect the necessary data. Defining a small scale of agricultural producers directly through monitoring of production potential, as is the case in European standard, is a better solution than the use of parity income.
15	Jamaica	Agrees with the FAO's proposal	consider using country-specific thresholds					

#	Country							
16	Portugal			good starting point, needs improvements			Use a combined (relative and absolute) approach.	Use the EU Standard Output for revenue. The treatment of producers who do not have animals or no area should be clarified. Don't need PPP$ in a relative approach
17	Belarus	Supports the three criteria (operated land, number of livestock and revenues from agricultural activities) and the relative threshold.						
18	Ecuador		The methodology is applicable.	Standardize the PPP by minimum salary or the cost of basic food basket				For fisheries, aquaculture and forestry, as a matter of fact that methodology of FAO propose to consider only the economic size, for many countries cases included Ecuador, the size based on revenue is directly and closely related with the physical size because the revenue depends of the capacity production and volume of production generated in a specific period.
19	Mexico			The relative approach is the best option but thresholds should be revised and made specific for each criterion variable			Proposes the usage of workforce rather than income as a criterion	Regarding fishing and aquaculture, given the particularities of these activities, they do not have the "size of the land" variable, since their activities is performed on bodies of water; instead we would have to consider the value of production (volume of fish caught or cultivated) or some other variable. Regarding silviculture, we would have to consider a

								similar method to agriculture, adapted to its own characteristics.
20	Macao, China		No comment.					
21	Montenegro							Describes the definition used in the country.
22	Hungary							Describes the definition used in the country, based on EU regulations. Do not agree on TLUs and PPP$. Observes that defining the 40 percent of the distribution requires a definition of the overall population of farmers.
23	Viet Nam	Agree on the approach.						
24	Italy							Data on farms and food processors are reported by different sources in different periods in Italy. The EU uses Standard Output to compute the economic value of ag holding, not revenues. Need to consider subsidies in revenues. The methodology should use available data.

25	Kazakhstan	The methodology is considered appropriate but application in the country is problematic as there is no data. Need AGRIS						
26	Sweden	We accept the definition if it fits well with the global purpose of the goal. An international definition is not easy to achieve, and what is considered a small producer depends on the country						
27	US						Recommends looking at actual farming systems. In Sub-Saharan Africa the 40% would exclude many "smallholders", whie in the US it would include hobby farms. Consider total income, not agricultural. Suggests using FAO guidelines on fisheries	

28	Canada					The methodology may not be useful to measure progress towards the targets in Canada, as most income of small scale farms comes from non ag activities and many are hobby farms		It seems possible to implement the definition in Canada
29	Mongolia	The methodology is considered appropriate but application in the country is problematic as there is no data. Need AGRIS						
30	Denmark					Definition needs to take into account country-specific features. The current one may bias the assessments of progress in indicators 2.3.1 and 2.3.2 .		
31	Philippines		Describes how the proposed methodology could be proxied with existing data sources in the country.					

32	Panama		Small scale producers are mostly producing for subsistence, only occasionally selling in the market.					
33	Lesotho	Agrees with the proposed methodology.						
34	Asian Dev. Bank							The measurement of criterion variable may be subject to errors and information may not be comparable across surveys
35	South Africa							Describes the definition used in the country.
36	Netherlands	Agree with the general methodology						Difficulties in implementation and availability of the data. No clear definition of food producer. Market orientation as a criterion that would differentiate a household from an agricultural holding is left out.
37	Egypt							Checked the availability of the data and mentioned that while the physical sizes of farmlands and livestock owned can be extracted from agricultural census, economic size of farmlands need a specific questionnaire. Since the MoA is doing the pre-testing stage of the agricultural census for 2007-2018, they mentioned the possibility of including new questions to measure the economic size.

38	Brazil	The proposed criteria are adequate and feasible						The criterion of income from agricultural activities, despite providing greater precision to the classification of agricultural producers regarding their scale of production, is not always a statistic available annually. This can be a limitation. The last data available in Brazil is from 2006, last agricultural census.
39	Dominican Republic							Provided with the national definition that was used in 1982 VII Censo Nacional Agropecuario, there is no any Agricultural Census since 1982 and it is mentioned that there has been an important transformation in agriculture
40	Liberia							Provided with the national definition: "Small Scale Food Producer: a farmer with average land endowment of 1.6 hectares (four acres) for agricultural (crops/livestock) production and uses simple tools such as cutlasses, axes, hoes etc. to carry on farming activities. Mainly, food (mixed crops) is produced by shifting cultivation for household consumption with limited use of agrochemicals".
41	Japan							"we understand that the criteria on the bottom of 40 % recommended by FAO is set only using the existing data grasped by each country. Then custodian agency should recognize that the data on producers using the method from FAO varies among the countries"

42	Tajikistan	"This is a very good methodology					
43	Israel					Proposes that when the data for one of the criteria is missing, countries would be able to choose a single criterion.	
44	Mauritius	"We are agreeable to the proposed definition"					
45	Germany						The "real" small scale food producers are cut off by the thresholds, which also differ in the EU. Expresses concern that data may not be available from one single survey.
46	Zambia	Supports and adopts the proposal of FAO					
47	Finland						The proposal is "non-significant in relation to the country's agricultural production" as "the smallest farms not producing food for the markets"
48	Lithuania			Threshold is too high.			
49	Suriname						Small scale farming is considered to be 0.01-12 hectares
50	Pacific Community				The operated land threshold can exclude small-scale producers.		

51	Uzbekistan						Suggests to use only the land and livestock criteria, and to qualify the definition by type products.	
52	Moldova			Physical size criteria are ok but the threshold is too low.				
53	France							Described the criteria used in the EU. The threshold of 40% seems very high for France. The economic size criterion captures gardens and people who do not live out of agriculture. This shows that this target is not relevant in developed countries.
54	Hong Kong, China							The definition would not be relevant for Hong Kong.
55	Malta	Believe that the document covers the required considerations that would lead to an international definition of "small-scale food producer". It also acknowledges the limitations there are in establishing such a definition, due to differences						This definition should help to narrow down the interpretation of what is to be considered "small-scale food producer"

		in the geographical, socio demographic, cultural, ecological and economic variables relating to countries.						
56	Palestine		no comments					
57	Botswana	The national definition is similar to the one proposed by FAO. Hence the proposed definition can be adopted.						
58	Iran							Presents the results of the application of the proposed methodology on National Census of Agriculture 2014