



Food and Agriculture Organization
of the United Nations

Methodology for monitoring SDG indicators 2.3.1 and 2.3.2

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Background

2 ZERO HUNGER



Target 2.3: *“By 2030, double 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”*

Official global indicators:

- **2.3.1:** The volume of production per labour unit by classes of farming/pastoral/forestry enterprise size
- **2.3.2:** The average income of small-scale food producers, by sex and indigenous status

Both these indicators are in **Tier II** = an internationally agreed methodology does exist. Very few data points are available.

The main contentious issue is the identification of a **harmonized definition of “small-scale food producers”**.

On the definition of small-scale food producers

Numerous ways to identify small-scale food producers are available in the literature. A broad categorization distinguishes among **definitions based on a single criterion** and those based on the **combination of multiple criteria**.

Criteria frequently found in the literature:

1. Criteria based on the **endowment of factors of production** (e. g. land, labour);
2. Criteria based on the **share of family workers in the holding**;
3. Criteria based on concepts referring to the **connection between the holding and the market** (e.g. own-consumption, subsistence, market orientation);
4. Criteria based on the **economic size of the holding** (e.g. revenues).

Land size is the most commonly used criterion, as the vast majority of “small-scale food producers” definition are based on the physical size of the farm and the number of livestock heads.

Absolute versus relative approaches to set a threshold for “small”

Thresholds to separate large from small holdings can be either **absolute** or **relative**:

Absolute thresholds: Assign, for a given criterion, **the same threshold for all countries**, regardless of agro-ecological and socio-economic conditions.

Pros: Enhance comparability across countries. It could be linked to measures of extreme poverty, thus establishing a close relationship between SDG1 and SDG2.

Cons: Disregards differences among national contexts. Furthermore, over time it will generate an adverse selection bias, which would lead to monitor the productivity/income of the worst performers (the best performers will leave the group of small-scale producers).

Relative thresholds: Assign a threshold that corresponds to **a specific percentile of the distribution** of the selected criterion variable in each country.

Pros: Identifies in each country producers who are relatively disadvantaged in terms of the selected criteria. Thus, this approach reflects more effectively the country-specific differences among food producers.

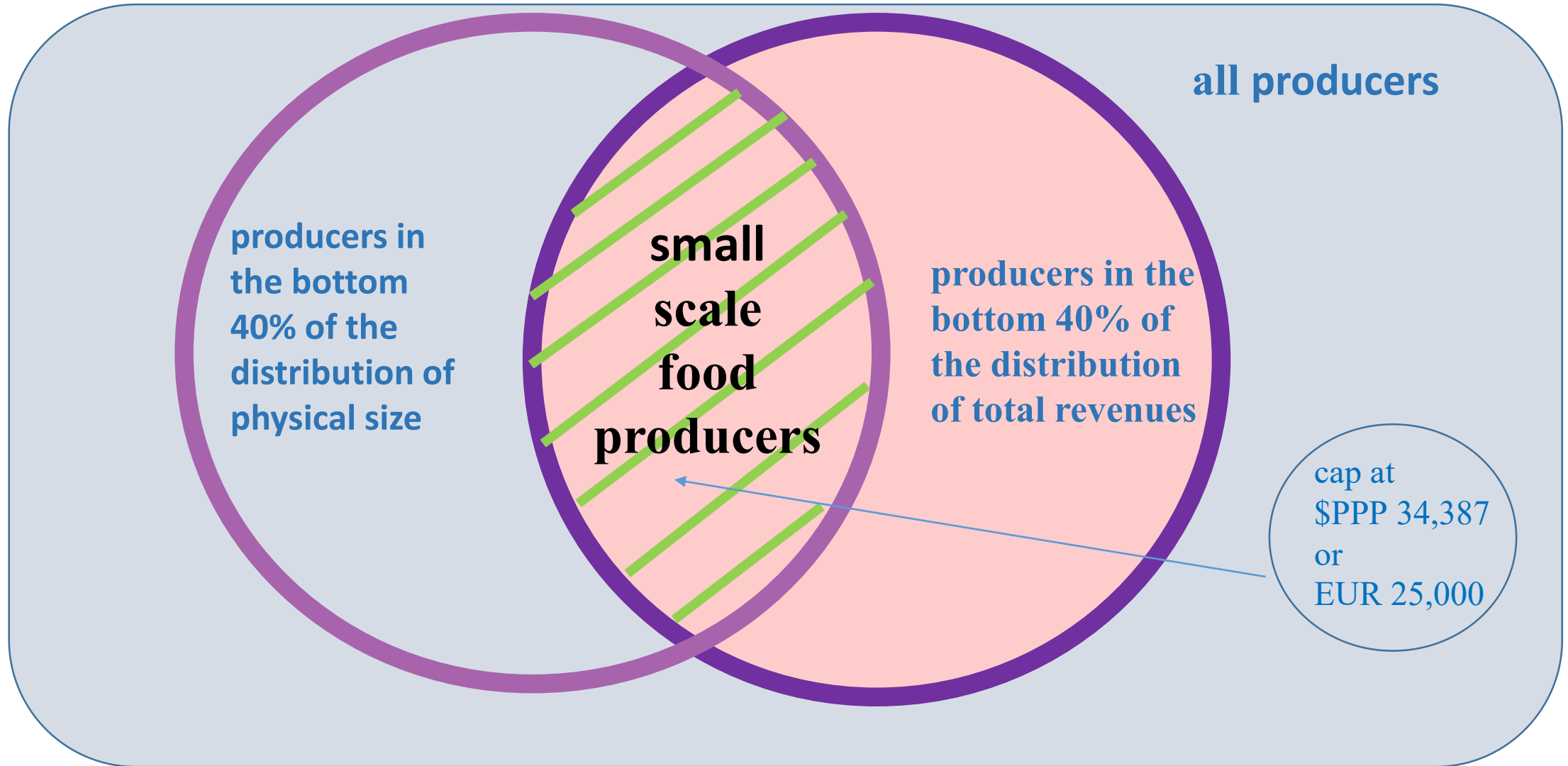
Cons: The use of different thresholds reduce the comparability across countries.

FAO proposal to define small-scale food producers

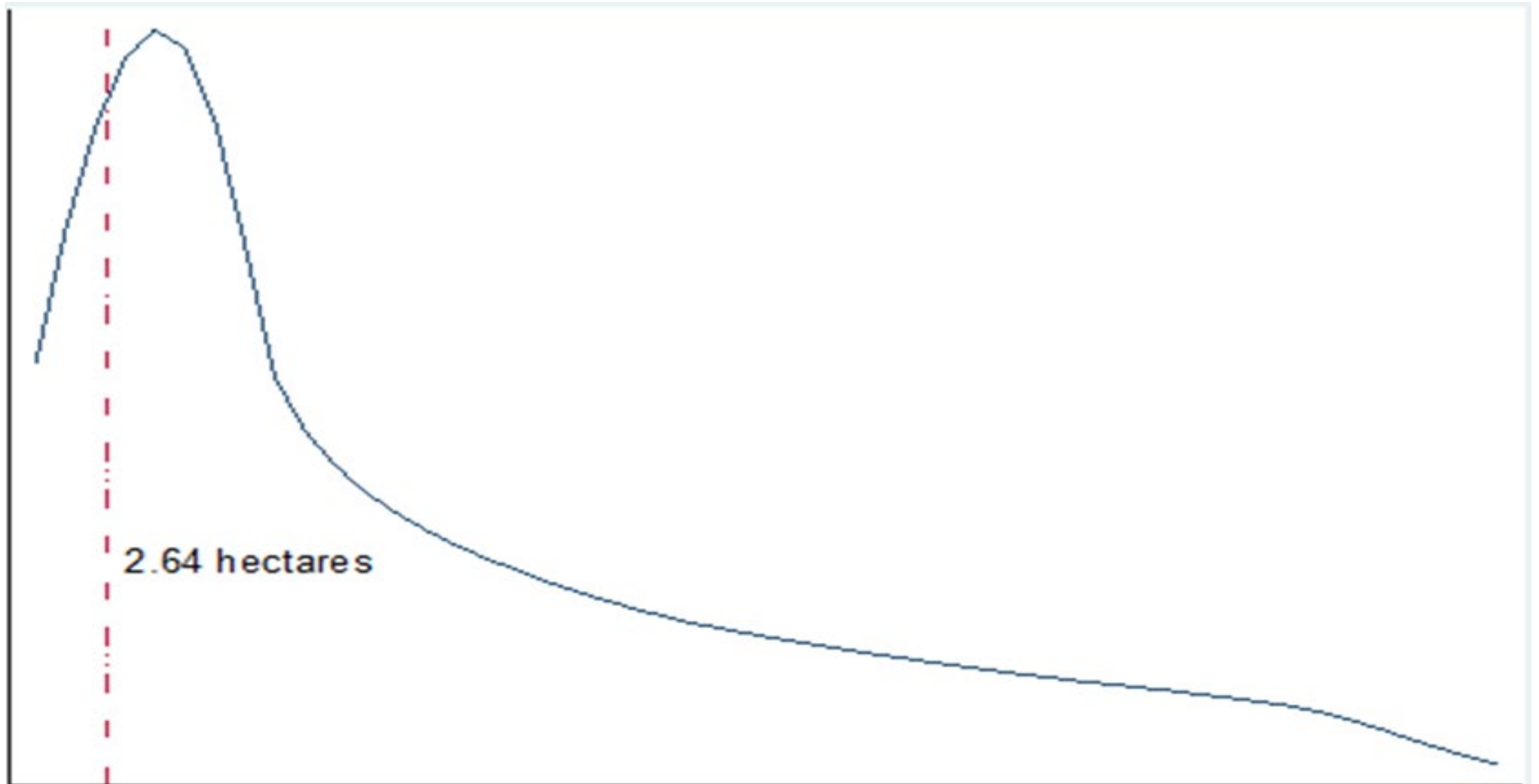
Using a **relative approach**, the proposed statistical definition by FAO defines small-scale food producers using two criteria:

1. **Physical size of the farm**, as expressed by:
 - a. **Land size**: producers falling in the bottom 40 percent of the distribution of land size, in hectares;
 - b. **Livestock**: producers falling in the bottom 40 percent of the distribution of total livestock heads
2. **Economic size of the farm**, as expressed by the bottom 40 percent of the distribution of total revenues measured in **PPP**
3. **An absolute cap** – in international dollars, to constrain the impact of relative criteria in certain countries

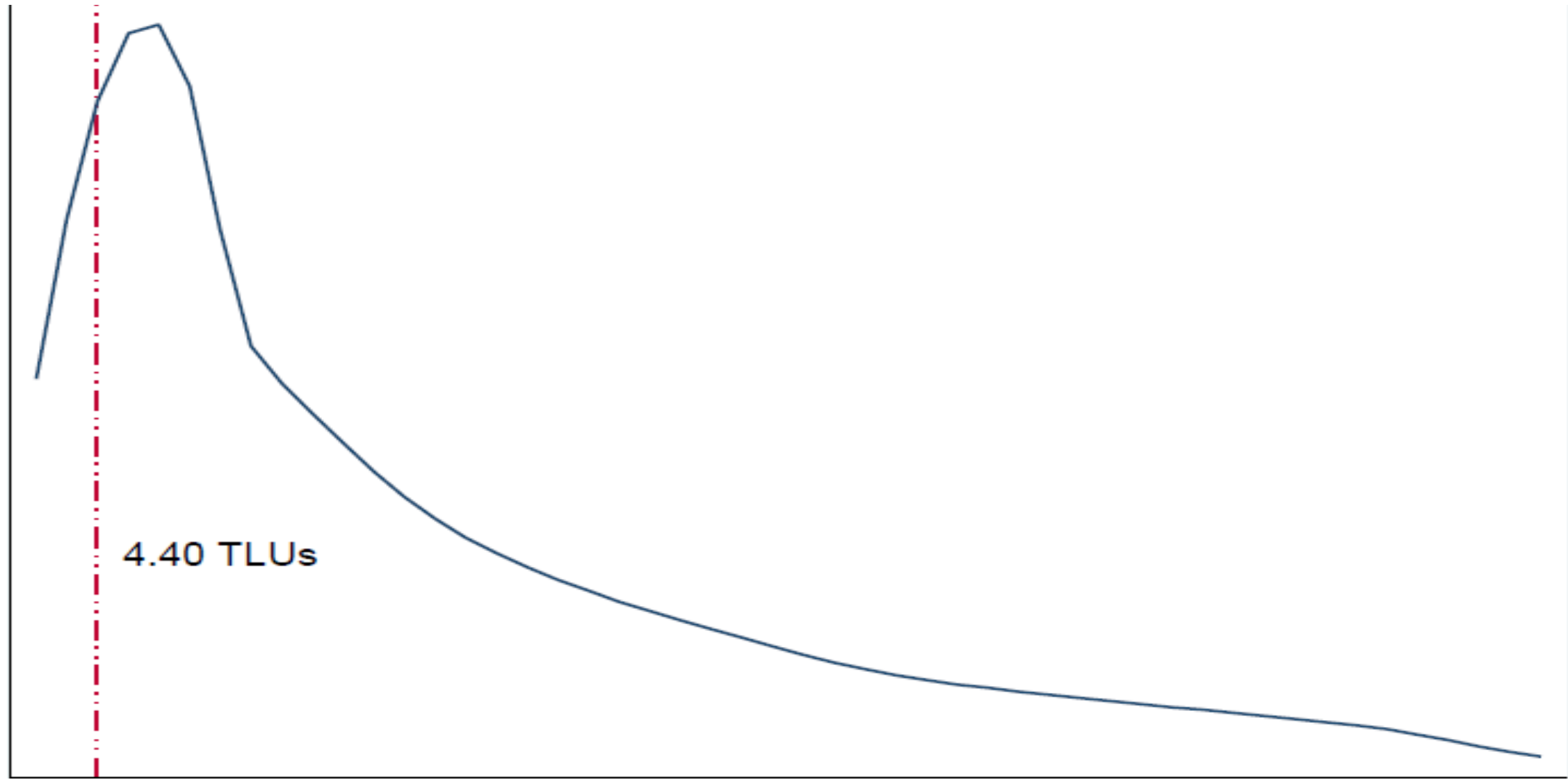
‘Small-scale food producers’ are those included in the intersection of these three criterion variables, plus an absolute cap



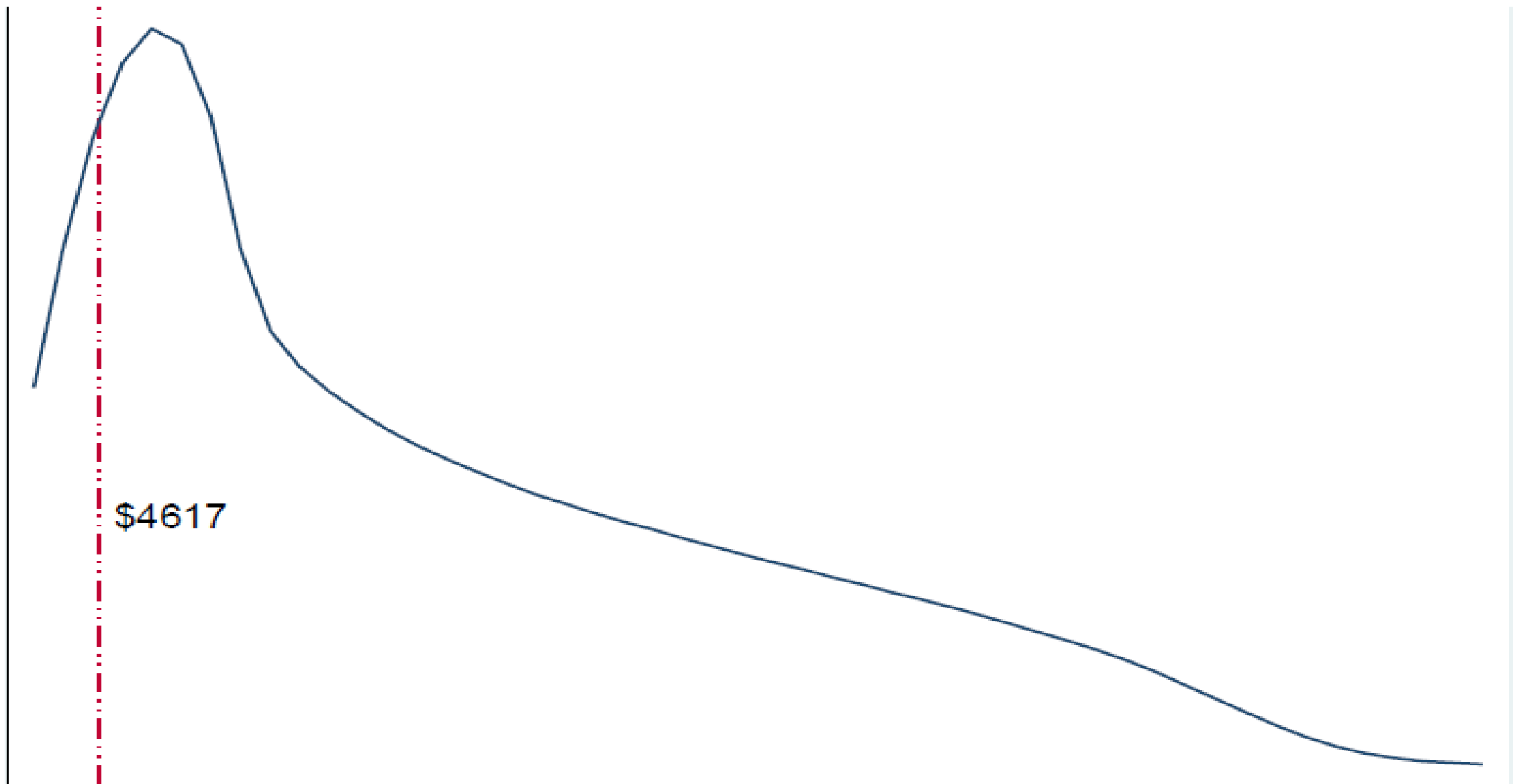
Distribution of land



Distribution of herds



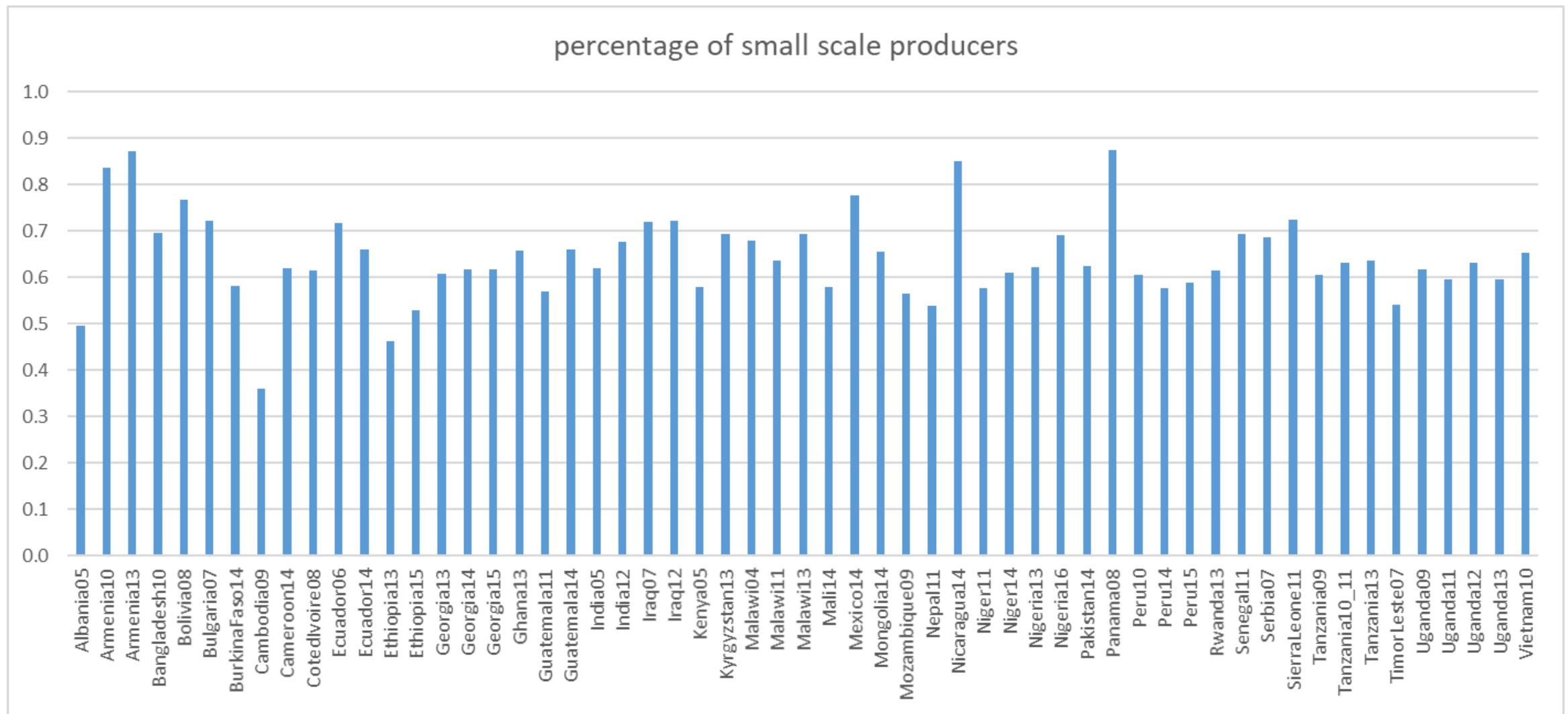
Distribution of revenues



Example: Small-scale producers in Smallscalestan (4)

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		5493	
HH2	1.12	1.6	746	442			1188	
HH3	2.89	5.7	3292	2566		523	6380	
HH4	4.07	4.4	3885	2257			6141	
HH5	0.2	4.2	2586	3715		265	6565	
HH6	1.73	5	813	1279			2091	
HH7	0.2	12	463	4743			5205	
HH8	0.51	1.5	195	342			536	
HH9	6.5	3.5	1103	223			1325	
HH10	3.56	4.6	4599	3453			8052	
HH11	3.19	10.7	1010	2417			3426	
HH12	2.44	2	1268	243		187	1697	
HH13	0.36	1.9	715	1130			1844	
HH14	0.08	1.3	587	1004			1591	
HH15	3.36	1.7	3364	1305			4668	
HH16	6.97	5.1	5213	1524	1064		7800	
HH17	2.95	4.5	2965	2270		2450	7684	
HH18	1.88	1.5	1600	651			2251	
HH19	6.74	5.1	4147	642			4788	
HH20	2.46	1.2	1451	377		450	2277	
HH21	6	0.1	187	120			306	

Percentages of small-scale food producers in *selected countries*, based on the proposed criterion (2)



Consultation on the definition of “small-scale food producer”

- The process:
 - FAO and UNSD submitted to UN member countries a technical note through the IAEG-SDG in August 2017
 - The consultation was opened for 4 weeks, and extended for 2 additional weeks
- Results: 58 replies from national and regional institutions by October 2017. Among these:
 - 3 rejections
 - 12 agreements with the general thrust, suggesting changes
 - 18 agreements
 - 25 neutral comments, mainly on national definitions in place.

Five main concerns (and **replies**) (1)

1. **Threshold: the relative 40 percent is arbitrary, too high or too low; better a range around it?**
 - all thresholds are somewhat arbitrary; the 40 percent is taken from the Shared Prosperity project
 - the relative criterion is already accommodating national specificities; a range of percentiles would destroy international comparability
2. **Simplistic: definition should consider additional criterion variables**
 - may increase precision in some countries, but also bias the results in other countries
3. **More tests are required**
 - The limiting factor to date was the availability and accessibility of farm-level micro-data: FAO is working to expand the testing in collaboration with member countries

Five main concerns (and **replies**) (2)

4. Data: definition requires complex data, which is not available
 - the definition requires the same type of information that is needed for monitoring SDG indicators 2.3.1 and 2.3.2. Data gaps have to be addressed anyway.

5. The inclusion error: definition may capture hobby farmers, or farmers whose main income is not derived from agriculture
 - adding criteria to avoid this error this may solve the problem in some countries, but lead to more exclusion (or inclusion) errors elsewhere
 - issue is better dealt at the national level, via convenient definitions of the “food producers” population

The consultation on the definition of “small scale food producers”

- **Additional refinements** to the definition were implemented, based on feedback from member countries and testing on a large number of national datasets
- The proposal was submitted to the 49th session of the UNSC. The Commission considered **acceptable** the methodologies for the two indicators but requested further work on the definition of small holders.
- **A task team of countries was established** to work on two key points of particular concern:
 1. how to **exclude non-professional farms** from the target population; and
 2. how to **adapt the definition to countries with relatively homogeneous farm scale** – where large-size farmers might end-up being considered “small scale”.

The consultation on the definition of “small scale food producers”

- Following in-depth discussions between May and July, this group arrived at the “**Sweden compromise**” for identifying **small-scale for producers** :
 1. Use the FAO combined 40th percentile method;
 2. Exclude “hobby” farms based on national diversity using a minimum threshold;
 3. Apply a maximum cap to exclude farms above 25,000 EUR adjusted using Price level indices (\$PPP 34,387).
- These proposed adjustments **did not alter the integrity** of the FAO methodology in so far as:
 - The maximum threshold of 25,000 EUR expressed in Intl\$ merely **adds a condition that could be applied to all countries**, yet also be especially relevant to certain countries where agricultural revenues are high
 - The exclusion of ‘hobby’ farms is **already embedded in data sources of several countries** by excluding a large number of very small farms that would be too costly to survey.

The indicators

Average labour productivity -- indicator 2.3.1 (1)

Indicator 2.3.1 monitors productivity as “The volume of production per labour unit by classes of farming, pastoral, forestry enterprise size.”

This results in the following formula:

$$\text{Agricultural Labour Productivity} = \frac{\text{Volume of Production}}{\text{Labour input}}$$

In order to standardize and aggregate different agricultural activities, FAO proposes to quantify the volume of production by taking the monetary value of the agricultural output (revenues) expressed in constant PPPs.

Agricultural income -- indicator 2.3.2 (1)

Indicator 2.3.2 refers to *“the average income of small-scale food producers, by sex and indigenous status.”*

- The computation of household income adopted by FAO Statistics Division is based on the resolution adopted by the 17th ICLS.

In particular, Indicator 2.3.2 considers on-farm income, including:

- Income from cropping activities;
- Income from livestock;
- Income from forestry;
- Income from fishery.

Agricultural income -- indicator 2.3.2 (2)

These income components refer to **gross income** that is defined as the **operating surplus** (i.e. revenues minus operating costs) without taking into account the depreciation of assets as such information is usually not available from most data sources. In formula:

Gross Income = *Revenues – Costs + (Stock Variation, when available)*

All the monetary variables should be **expressed in constant PPP** and **deflated**, in order to take into account the inflation occurred during the data collection period.