

EU Agricultural Economic Briefs

What is a small farm?

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Introduction

In recent years small farms have received increased attention in the political debate, recognizing the role they play in rural areas and the need to improve their economic and social conditions in times of structural change of the agricultural sector towards fewer and larger farms. However, the wide variation in farm structures across the EU-27 and the lack of consistent data for all Member States are amongst the main reasons why a commonly agreed definition of 'small farms' does not exist. The present note briefly analyses possible criteria which could be used to define 'small farms', including the definition of appropriate thresholds in order to use common criteria for statistical analysis and policy purposes.

The question of "what is a small farm?" has many answers, depending on the context in which it is posed. To analyse farm structures and compare them across different countries, regions, or over time, physical measures such as hectares of UAA or labour input per farm can be used. However, these measures are highly dependent on the type of farming and provide little information on the economic situation of a farm. If small farms are to be identified with the aim of highlighting their need for special support measures, the economic farm size seems to be most appropriate criterion.

1. SMALL FARMS ARE IN THE FOCUS ...

In recent years, and in particular following the accession of Bulgaria and Romania to the European Union, small farms have received increased attention in the political debate. Greater market orientation of agriculture, coupled with productivity gains largely supported by technological progress (e.g. mechanisation, development in crop and animal genetics), are driving a process of structural change towards fewer and larger farms. However, significant numbers of small farms exist in many Member States. Small

farms play an important role in supporting rural employment and maintaining the social fabric of rural areas and thus contribute to the objective of balanced territorial development. In addition, structural diversity in the farming systems contributes to the attractiveness and identity of rural regions. Given the intrinsic constraints of small farms in benefiting from existing support measures, targeted initiatives are currently being debated to improve the social and economic conditions for small farms.

2. ... BUT WHAT EXACTLY IS A SMALL FARM?

These debates quickly reach a point where a definition of 'small farms' is needed. However, the wide variation in farm structures across the EU-27 and the lack of consistent data for all Member States are amongst the main reasons why a commonly agreed definition of 'small farms' does not exist.

Different criteria can be used to describe small farms. In the political debate, the notion of 'small farms' goes hand in hand with ideas of disadvantage, risk of poverty, lack of opportunity, and the need for support. A definition of 'small farms' should be able to somehow capture these elements, including the definition of appropriate thresholds in order to use common criteria for statistical analysis and policy purposes.

Choosing an appropriate definition for small farms is difficult, mainly due to three reasons, which will be briefly analysed in the following paragraphs:

- (1) what physical or economic criterion should be used to define the threshold,
- (2) once the criterion has been chosen, whether to consider it in absolute or relative terms, where relative means in relation to the characteristics of all farms in a given area and, finally,
- (3) what relevant consistent data are available at EU level.

2.1. Choosing the most appropriate criterion

Previous studies suggest that small-size agricultural holdings are characterised by common features, some of which can be used as units of measurement to tell small size activities from the rest of the agricultural sector.

The set of common features contains the utilised agricultural area (UAA), the amount of labour input, the level of self-consumption and the economic size of the farm. These four criteria will thus be used in the analysis at hand.

In addition, a second group of common characteristics can be used for a better understanding of the nature of small farms. These characteristics include common patterns in terms of family management, use of hired workforce, contribution of non-farm sources of income, technological level, input perspectives and risk-taking, age of the workforce, conservative vs. innovative behaviour, level of training, degree of specialisation, etc. These criteria could be used in future analyses to emphasize the differences between small farms and the rest of the agricultural sector.

2.2. Absolute vs. relative terms

The threshold for any given criterion, i.e. the cut-off point below which agricultural holdings would be considered to be small, should reflect the great diversity of structural patterns throughout the EU-27. This threshold can be designed in two ways:

- (1) selection of an absolute value, which could be applied equally to all Member States, or
- (2) the choice of a threshold in relative terms.

According to the first option, small farms would be defined as those falling below a threshold expressed in absolute terms for a given variable (e.g., a given number of hectares of agricultural area; a given amount of standard gross margin). This absolute threshold would be applicable equally to all Member States and could be selected, for example, to cover all farms below the EU average value of that variable, or it could be selected, for example, at Member State level to cover all farms below the Member State average value of that variable.

Absolute thresholds are most commonly used for statistical analysis and policy matters, owing to their easy application and understandable meaning. However, this approach does not always fit all the different situations throughout the EU-27: for example, the choice of a certain number of hectares of agricultural area would lead to defining as

'small farms' almost all holdings in one Member State and almost none of the holdings in another Member States.

According to the second option, the threshold would be defined in relation to the distribution of a given variable at Member States level. For example, a threshold could be set to cover the smallest farms whose UAA, when sorted by size, make up 20% of the total UAA in a Member State.

The second option considers national specificities and thus seems to be most appropriate to describe the different structural patterns existing in the EU-27. On the other hand, it is less straightforward since it requires more calculations. The absolute value of the threshold will be different in each Member State, making comparisons of farms across Member States difficult. Moreover, the problem of defining the relative threshold value remains (e.g. the threshold could be set in such a way to identify the smallest farms covering 10% of the UAA – or 15%, 20%, etc.).

Examples of the different results obtained by using the two options will be given for some of the criteria chosen as unit of measurement.

2.3. Data availability

Once a unit of measurement to define small-size farming has been chosen, problems may arise linked to the availability of data.

A general problem is the lack of data regarding the smallest entities. In fact, some of them may simply not be considered in any statistics or administrative data sources since they do not keep any records regarding their production figures.

Also the two main official data sources at EU level, the Farm Structure Survey (FSS) and the Farm Accountancy Data Network (FADN), present some limitations. The latter – according to Council Regulation (EC) No. 1217/2009 – only covers commercial farms, i.e. farms large enough to serve as the main activity for the farmer and to provide a level of income sufficient to support the household. In practical terms, in order to be classified as

'commercial', a farm must exceed a minimum economic size which is defined at Member State level. The smallest units are thus excluded from the data collection.

General requirements for the FSS (Council Regulation (EC) No. 1166/2008) are to cover agricultural holdings where the agricultural area utilised for farming is one hectare or more, or agricultural holdings where the agricultural area utilised for farming is less than one hectare, if they produce a certain proportion for sale or if their production unit exceeds certain physical thresholds. Member States which use a different survey threshold should fix this threshold at a level excluding only the smallest holdings which together contribute 1% or less to the total standard gross margin. Given these requirements, the smallest farms are excluded from the survey, even if they provide households with goods for self-consumption or produce a small proportion for the market.

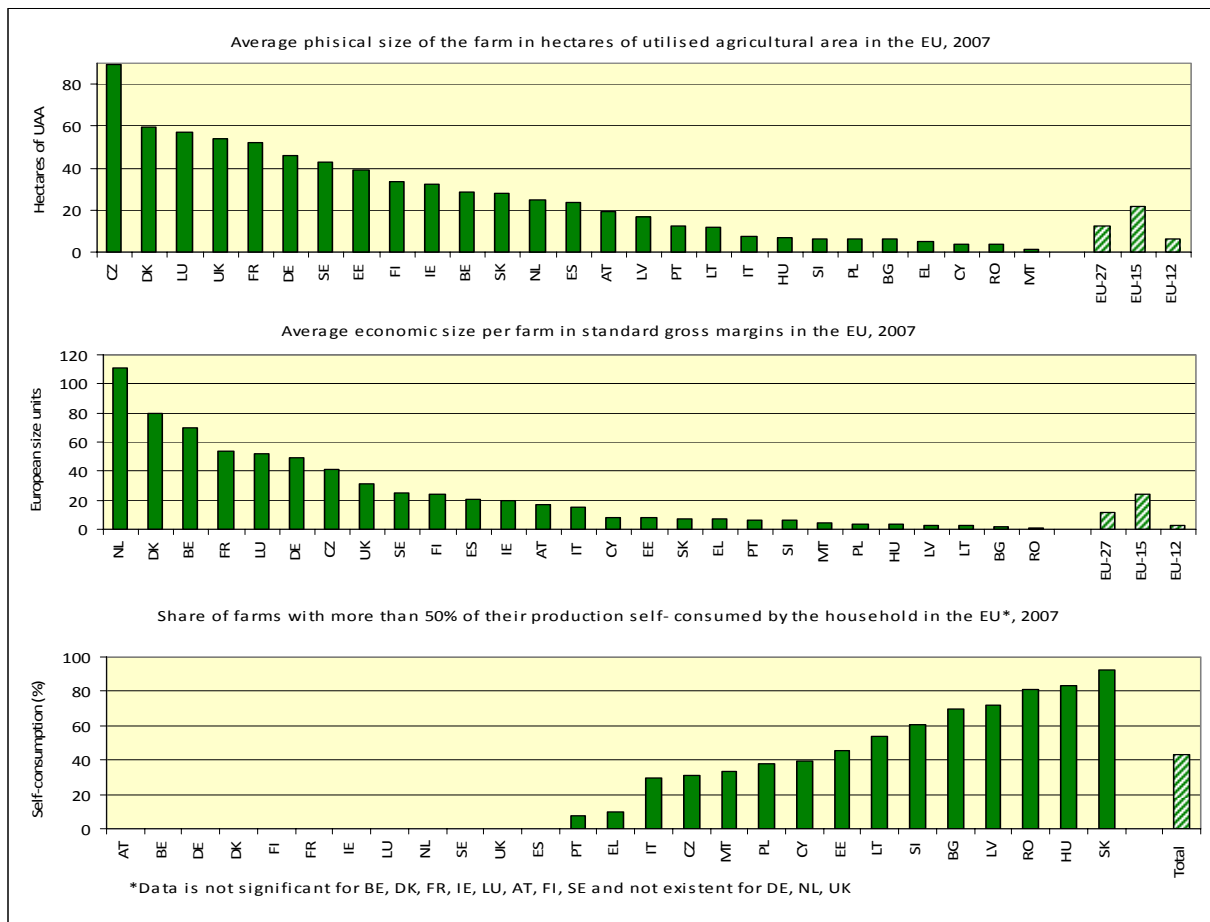
The data shown in the following paragraphs have been taken from the FSS database, which is the only harmonised source for a wide range of structural data of EU farms, keeping the mentioned restrictions in mind.

3. BENEFITS AND DRAWBACKS OF THE DIFFERENT DEFINITIONS

As already stated above, physical measures (in terms of land or labour input), market participation and economic size are the most commonly used criteria for defining small farms. All these criteria show that the relative importance of small holdings is significantly different among Member States.

As Graph 1 clearly shows, the relative importance of small farms is generally higher in the EU-12 than in the EU-15, a significant share of EU-12 farms having fewer hectares of utilised agricultural area, a reduced economic size in terms of standard gross margin and more than 50% of their production self-consumed by the household.

Graph 1. Average farm in terms of UAA, ESU and self-consumption in the EU-27, 2007



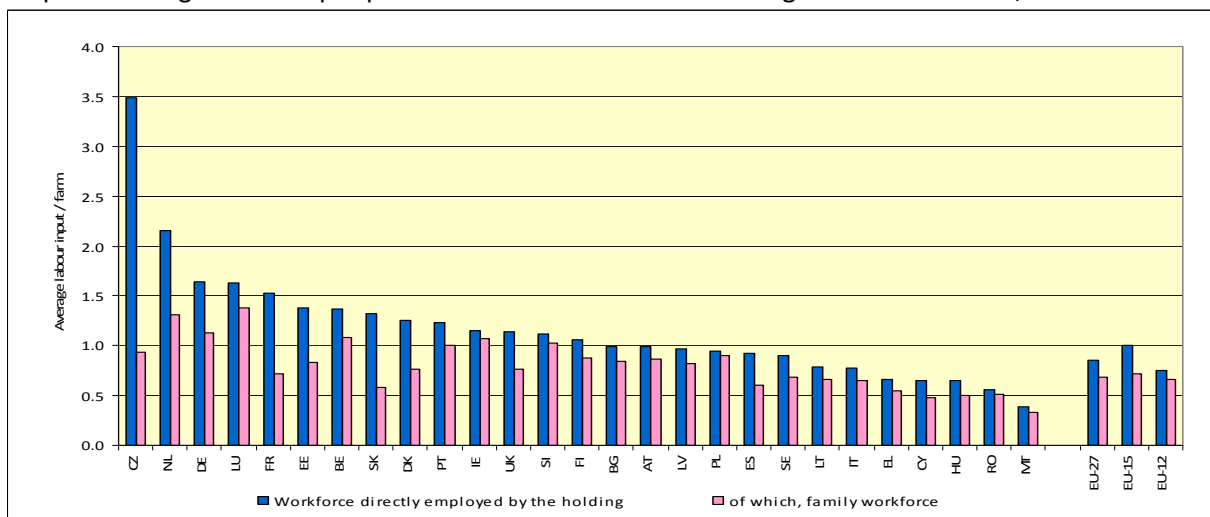
Source: EUROSTAT, Farm Structure Survey, 2007

Differences are less evident for the average labour input per farm. Even if the amount of annual working units per farm is generally higher in the EU-15 than in the EU-12, there are significant exceptions, such as the Czech Republic, Slovakia and Estonia, where there is a strong presence of non-family workforce

employed by the holding compared to the family workforce engaged in the farming activity, as shown in Graph 2.

Given this diverse situation across Europe, it is clear that the choice of the criterion has a significant impact on the number of farms considered to be small in each Member State.

Graph 2. Average labour input per farm in terms of annual working units in the EU-27, 2007



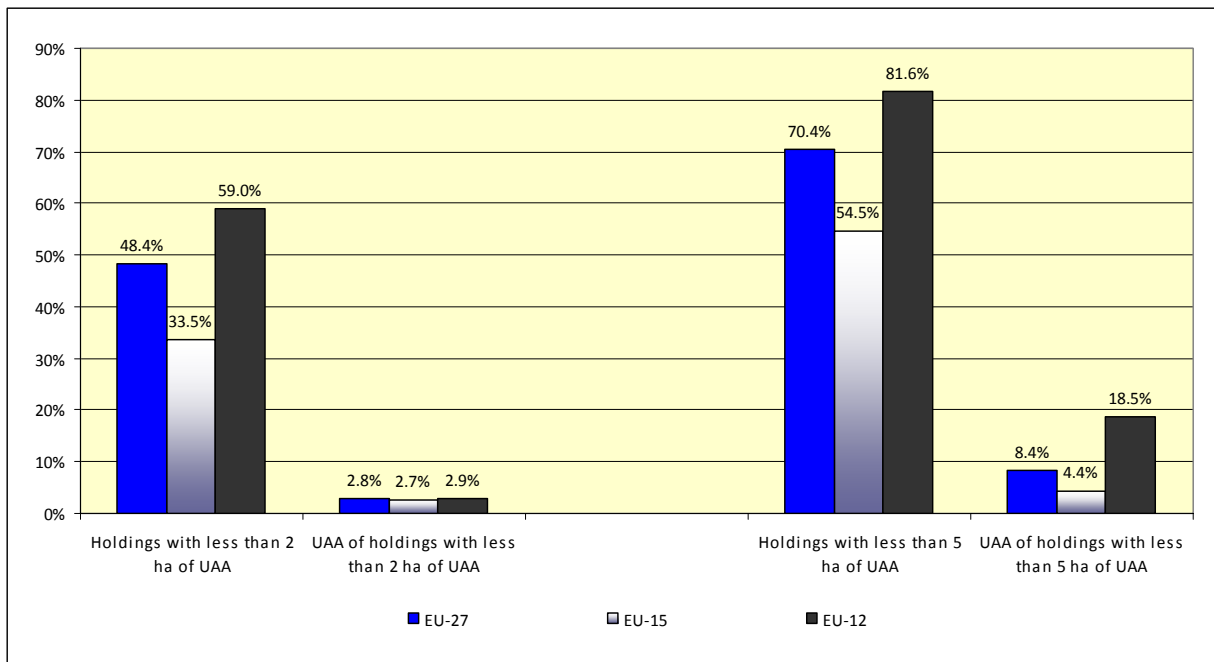
Source: EUROSTAT, Farm Structure Survey, 2007

3.1. Hectares of UAA

The physical size of the farm is most commonly characterised by the number of hectares of UAA. It is easily measurable, available for all farms as univocal information and already extensively used in the literature for political, statistical and economic analyses. A small number of hectares of arable land has indeed been mentioned as a suitable indicator to designate small-size farming in several FAO, IFAD and World Bank documents, even if it is

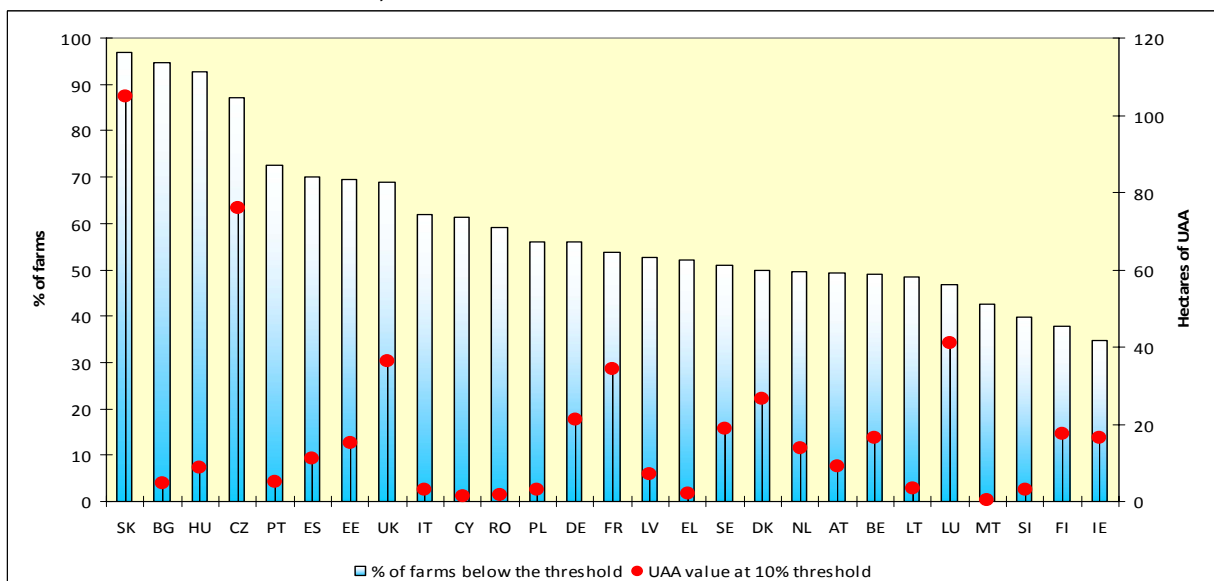
often overlaid with other farm characteristics, such as the reliance on household members for most of the labour, a low asset base, more work units per hectare than large farms, etc. By applying this criterion, small farms are often defined as those farms having less than 2 or less than 5 hectares of UAA. Graph 3 shows which share of farms would be considered small in the EU-27 and in the new and old Member States aggregates, and how much UAA they represent.

Graph 3. Share of holdings with less than 2 and less than 5 ha of UAA and their UAA in the EU, 2007



Source: EUROSTAT, Farm Structure Survey, 2007

Graph 4. Share of farms when UAA threshold is set at 10 % of total UAA and corresponding area (ha) threshold in the Member States, 2007



Source: EUROSTAT, Farm Structure Survey, 2007

On the other hand, Graph 4 shows which share of farms would be considered small if a relative threshold is applied to cover the smallest farms whose combined UAA makes up 10% of the total UAA in a Member State. The cut-off point, i.e. the number of hectares of UAA below which a farm is considered to be small according to this relative threshold, is indicated by the red dot.

However, the sole number of hectares is not enough to characterise the specific problems a 'small farm' might face. In fact, this criterion does not consider important factors such as the diverse needs of cropland depending on the type of farming, the land fertility, the irrigation system, etc. As an example, it is well known that farms specialised in horticulture or pig and poultry breeding generally have a smaller than average UAA; on the other hand, some of these farms (above all poultry breeding farms) cannot be considered to be disadvantaged and are economically rather strong.

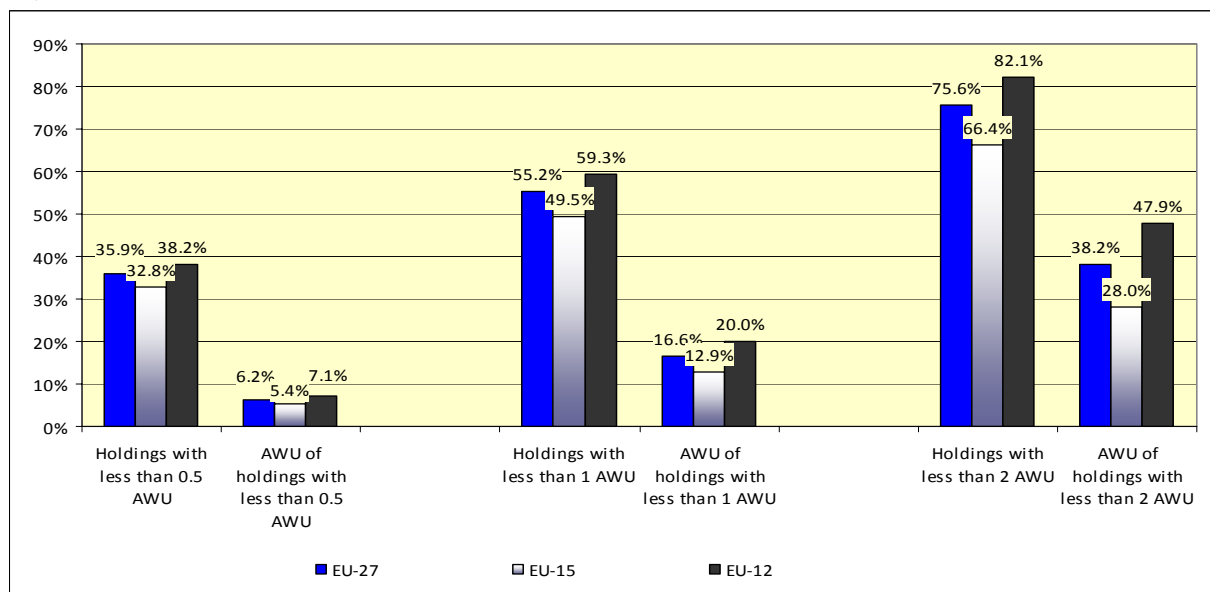
In conclusion, data about the number of hectares of UAA are certainly easy to collect and to use. Looking at the development over time of average farm size in terms of UAA can give an indication of structural change, especially when observing this development within a group of similar farms. However,

small physical size alone is at best a partial indicator of a farm being disadvantaged and in need of support.

3.2. Labour input

Labour input represents a different approach to measuring the size of agricultural holdings and to classify them accordingly. The underlying idea is that small farms are likely to have a lower overall labour input than larger farms. The easiest way to measure labour input is to count how many persons work on the farm. However, the agricultural workforce is characterised by a strong presence of part-time jobs, so that labour input can be measured more precisely by counting the number of annual working units (AWU) per farm instead of the number of persons. The number of AWU is available in the FSS database as the equivalent in full-time work of each person working on the farm. By applying the criterion of AWU per farm, small farms could be considered those having a certain value or a value lower than a given threshold. Graph 5 shows which share of farms would be considered small in the EU-27 and in the new and old Member States aggregates if the threshold was set at 0.5, or at 1, or at 2 AWU, and how many annual working units they represent, taking into account the whole workforce directly employed by the holding.

Graph 5. Share of holdings with less than 0.5, less than 1 and less than 2 AWU and their AWU in the EU, 2007

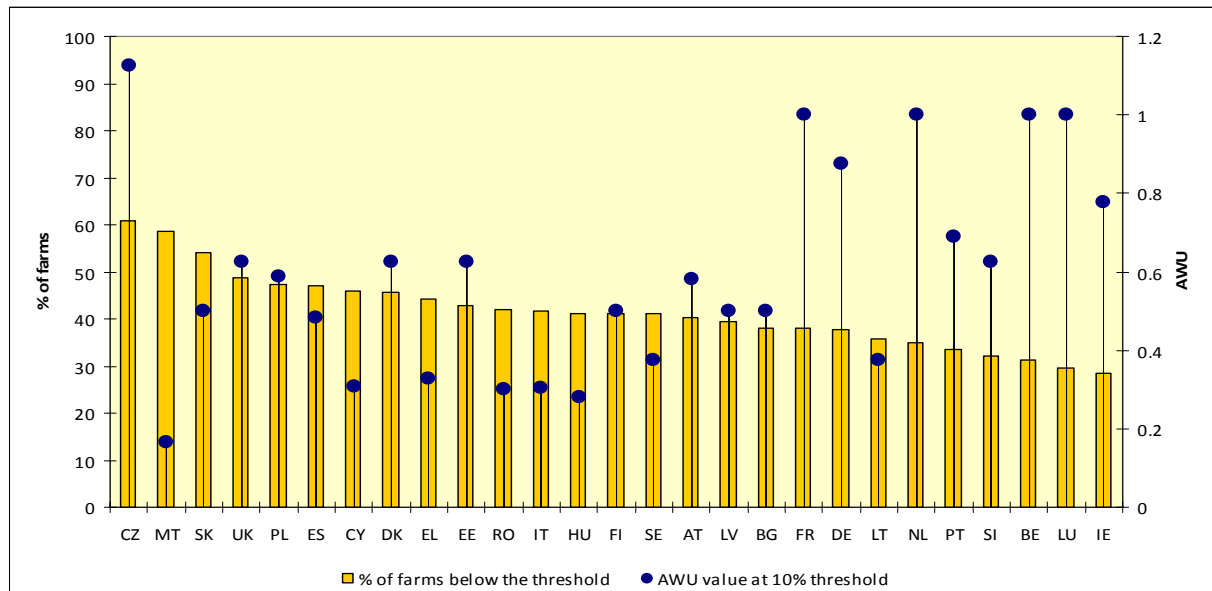


Source: EUROSTAT, Farm Structure Survey, 2007

Graph 6 shows which share of farms would be considered small by applying a relative threshold to cover the smallest farms whose AWU makes up 10% of the total AWU in a

Member State. The number of AWU corresponding to this relative threshold is indicated by the blue dot.

Graph 6. Share of farms when AWU threshold is set at 10 % of total AWU and corresponding labour input (AWU) threshold in the Member States, 2007



Source: EUROSTAT, Farm Structure Survey, 2007

As for the hectares of UAA, the information is clear, easy to collect and to understand. However, also in this case the results of the classification of farms should consider other agro-ecological and socio-economic factors which may influence the amount of labour input required on the farm. In particular, different types of farming have different labour requirements which may be inversely correlated with physical farm size: for example, a horticultural enterprise may have a small physical area but a high number of workers, whereas the opposite is true for grazing livestock enterprises. It is difficult to classify either of these farms as 'small' in line with the notion of being disadvantaged and in need of support based on the two criteria of farm size and labour input.

3.3. Market participation

Market participation classifies agricultural holdings based on the level of a household's self-consumption of the holding's production. According to this criterion, farms are often divided into subsistence, semi-subsistence and

commercial farms. For the purpose of rural development support (Regulation (EC) No. 1698/2005), semi-subsistence farms have been defined as those agricultural holdings which produce primarily for their own consumption and also market a proportion of their output, but without defining a specific threshold. 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 revenue. In fact, the main role of farms producing primarily for self-consumption is often to provide rural people with income and food even in difficult conditions.

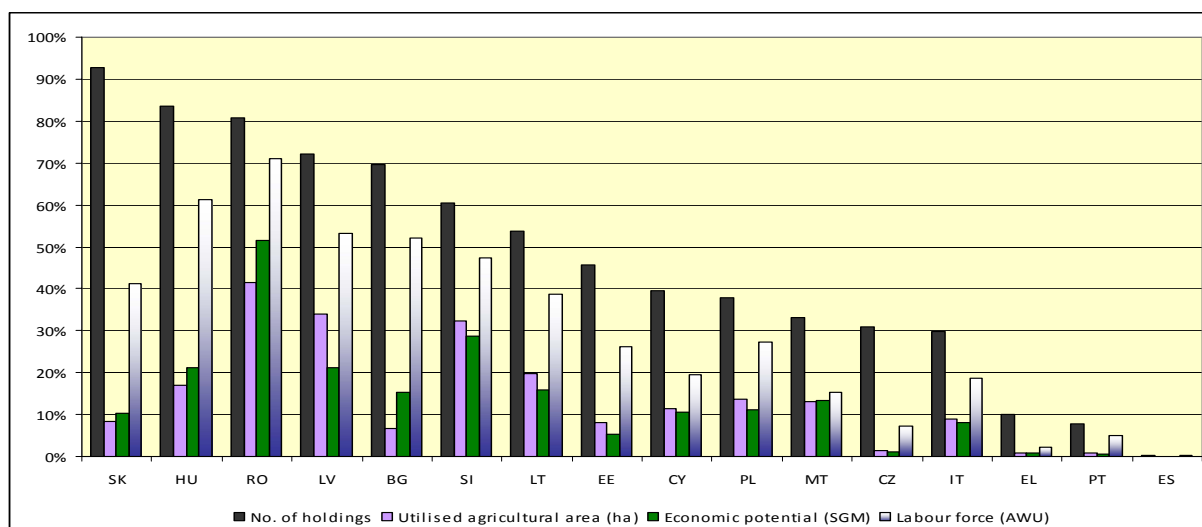
The drawback of the market participation criterion is, as in other cases, the lack of data. In fact, using FSS data, we can only obtain a simplified bimodal classification which divides farms into two groups: one with less and another with more than 50% of the production self-consumed by the household. Moreover, the choice of putting the farm above or below this threshold of 50% is based

on an estimation done by the farmer, since no information is collected on the production.

If data were available, the level of self-consumption could have also been estimated by looking at the inputs from outside the agricultural holding, since usually subsistence farms rely on family labour, manure from their own animals, etc.

If we combine the criterion of market participation with the other variables previously analysed, Graph 7 shows which share of farms self-consume more than 50% of their production, and how much UAA, SGM and AWU they represent in the Member States for which data are available.

Graph 7. Share of farms self-consuming more than 50% of their production and their main features, 2007 (Member States not included consider the issue of self-consuming 'non-significant')



Source: EUROSTAT, Farm Structure Survey, 2007

In conclusion, the market participation criterion provides a partial description of the economic situation of the farm, but the lack of information constitutes a serious limit to its use to identify small farms.

3.4. Economic size

Moving from physical to economic units of measurement, data availability represents a serious limitation for defining small farms according to their economic size. Since it will be not possible to find an agreement on what is small if consistent data are not available for the EU-27 and given the lack of information on the revenue of the smallest farms (as explained in paragraph 1.3), the only economic criterion which is utilisable is the economic size of the farm. This is expressed in terms of European Size Units (1 ESU = 1200 euros), namely the potential gross value added of the agricultural holding calculated as the sum of the standard gross margins (SGM)

of each agricultural activity present in the farm.

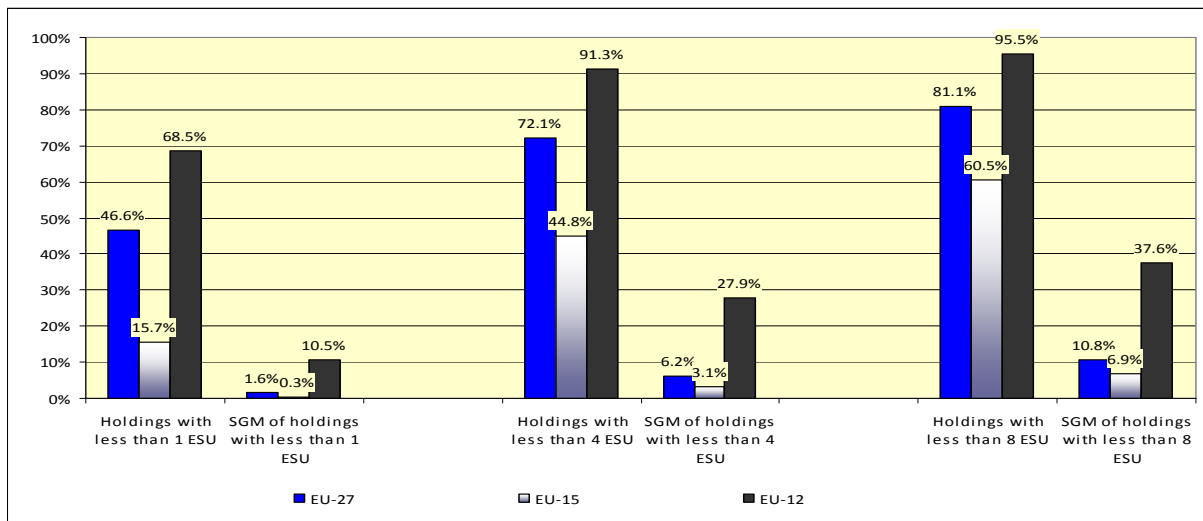
This criterion is commonly used in the EU for statistical purposes (such as for the FADN methodology), but also for policy purposes (for example, several Member States have decided to use ESU thresholds to define semi-subsistence farms to be supported by some measures of their Rural Development Programmes).

The main limitation of this criterion is its reliance on standardised values, which could be erroneously misinterpreted as the actual economic results of the agricultural holding. Instead, a farm's SGM is calculated as the difference between the average production value and the average costs of each agricultural activity per hectare (or head) of each type of crop (or livestock) at regional level. This means that in a given region the SGM of 1 hectare of a specific crop has the

same value for all the holdings harvesting that crop, without considering any farm specificities which could affect the actual outcome (e.g. the actual amount of crop harvested, better or worse location of the farm in terms of slope, natural conditions, etc.). Small farms are often defined as those

farms having less than 1, less than 4 or less than 8 ESU. Graph 8 shows which share of farms would be considered small by applying these criteria to the EU-27 and to the new and old Member States aggregates, and how much total SGM they represent.

Graph 8. Share of holdings with less than 1, less than 4 and less than 8 ESU and their SGM in the EU, 2007

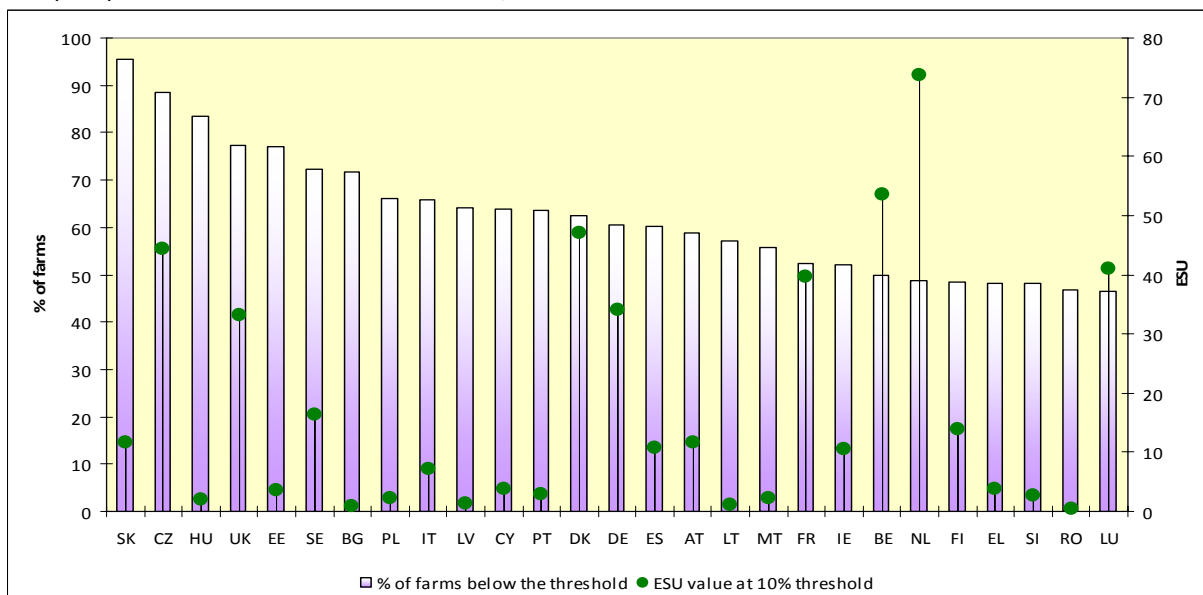


Source: EUROSTAT, Farm Structure Survey, 2007

Graph 9 shows which share of farms would be considered small in the Member States by applying a relative threshold to cover the smallest farms whose ESU makes up 10% of

the total SGM in a Member State. The ESU value corresponding to this relative threshold is indicated by the green dot.

Graph 9. Share of farms when ESU threshold is set at 10 % of total ESU and corresponding economic size (ESU) threshold in the Member States, 2007



Source: EUROSTAT, Farm Structure Survey, 2007

The greatest advantage of using ESU as defining criterion for small farms lies in the fact that the economic size of farms can be compared across different farm types. A small economic size is closely related to concerns about a farm's ability to survive in the market and its need for special support measures. Applying the ESU criterion in relative terms has the added advantage of defining small farms in relation to all other farms in a Member State, thereby reflecting the particular situation in that country and identifying those farms which in relative terms are most disadvantaged.

4. CONCLUSIONS

The question of "what is a small farm?" has many answers, depending on the context in which it is posed. For purposes of analysing farm structures and comparing them across

different countries, regions, or over time, physical measures such as hectares of UAA or labour input per farm can clearly be used. However, these measures are highly dependent on the type of farming and provide little information on the economic situation of a farm. If small farms are to be identified with the aim of highlighting their need for special support measures, the economic size criterion seems to be most appropriate, despite the limitations stressed before. Moreover, applying the economic size criterion in relative terms allows a characterisation of small farms in the EU which is as close to the particular national situation as possible. Actually, as Table 1 clearly shows, using low absolute thresholds – more appropriate for the EU-12 – would lead to the conclusion that there are no small farms in some countries of the EU-15. However, given that the economic size criterion can only offer a simplified description

Table 1. Share of farms which would be considered small by applying above mentioned criteria to EU Member States, 2007

CRITERION	Hectares of UAA			Labour input in AWU				Market participation	ESU			
	ABS Less than 2	ABS Less than 5	REL UAA at 10%	ABS Less than 0.5	ABS Less than 1	ABS Less than 2	REL AWU at 10%	ABS More than 50% self-consuming *	ABS Less than 1	ABS Less than 4	ABS Less than 8	REL ESU at 10%
BE	14%	25%	49%	21%	37%	57%	31%		4%	14%	22%	50%
BG	87%	95%	95%	12%	21%	31%	38%	70%	76%	96%	98%	72%
CZ	34%	50%	87%	25%	41%	71%	61%	31%	34%	63%	72%	88%
DK	2%	4%	50%	47%	70%	87%	46%		1%	11%	27%	63%
DE	7%	23%	56%	16%	32%	57%	38%		6%	25%	38%	60%
EE	13%	36%	69%	13%	26%	46%	43%	46%	45%	82%	89%	77%
IE	1%	7%	35%	28%	42%	57%	28%		8%	30%	49%	52%
EL	50%	76%	52%	24%	41%	70%	44%	10%	17%	55%	75%	48%
ES	28%	53%	70%	42%	63%	83%	47%	0.3%	10%	38%	57%	60%
FR	13%	25%	54%	35%	53%	71%	38%		7%	21%	29%	52%
IT	50%	73%	62%	28%	44%	58%	42%	30%	18%	55%	72%	66%
CY	69%	86%	61%	19%	28%	39%	46%	40%	30%	70%	83%	64%
LV	17%	41%	53%	42%	70%	90%	39%	72%	59%	90%	95%	64%
LT	14%	61%	48%	8%	19%	40%	36%	54%	63%	92%	96%	57%
LU	10%	18%	47%	42%	62%	77%	29%		3%	13%	23%	47%
HU	82%	89%	93%	32%	56%	87%	41%	83%	78%	92%	95%	84%
MT	90%	97%	43%	3%	15%	31%	59%	33%	31%	76%	86%	56%
NL	14%	28%	50%	27%	44%	74%	35%		0%	1%	11%	49%
AT	12%	33%	49%	70%	81%	88%	40%		21%	41%	55%	59%
PL	44%	68%	56%	8%	15%	29%	47%	38%	53%	80%	90%	66%
PT	47%	73%	72%	34%	48%	68%	33%	8%	34%	75%	86%	64%
RO	65%	90%	59%	15%	32%	59%	42%	81%	78%	98%	99%	47%
SI	25%	59%	40%	43%	68%	92%	32%	60%	18%	68%	84%	48%
SK	76%	87%	97%	33%	50%	70%	54%	93%	77%	93%	95%	95%
FI	3%	10%	38%	15%	34%	67%	41%		2%	22%	40%	48%
SE	2%	15%	51%	35%	61%	86%	41%		21%	48%	63%	72%
UK	28%	40%	69%	37%	49%	63%	49%		40%	56%	64%	77%

* In FSS 2007 data is available for 16 MS. For 11 MS this type of holdings is Non-Existing (NE: for DE, NL, UK) or Non-Significant (NS: for BE, DK, FR, IE, LU, AT, FI, SE).

Source: EUROSTAT, Farm Structure Survey, 2007

of the economic situation of farms and of farmers' standard of living, it would be fair to say that the smallest farms in each country deserve special attention, regardless of how they compare with small farms elsewhere. To conclude, different options are available to characterize small farms. The choice among

different criteria and thresholds depends on the purpose for which small farms need to be identified and must necessarily consider limits and characteristics of available data together with the enormous diversity in terms of farms structures throughout the EU.

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