FAMILY AGRICULTURAL HOLDINGS IN BULGARIA
CASE STUDY IN HORTICULTURE

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Abstract
An agricultural holding is an economic unit of agricultural production under single management and comprises all the livestock kept and all the land used, wholly or partly, for agricultural production purposes, without regard to title, legal form or size. Management may be exercised in the following ways: singly, by an individual or household; jointly, by two or more individuals or households; by a clan or tribe; or by a juridical person such as a corporation, cooperative or government agency. (FAO. 1995. Programme for the World Census of Agriculture 2000, p. 28. FAO Statistical Development Series No. 5. Rome.) Family farming includes all family-based agricultural activities, and it is linked to several areas of rural development. Family farming is a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production which is managed and operated by a family and predominantly reliant on family labour, including both women's and men's. Both in developing and developed countries, family farming is the predominant form of agriculture in the food production sector. At national level, there are a number of factors that are key for a successful development of family farming, such as: agro-ecological conditions and territorial characteristics; policy environment; access to markets; access to land and natural resources; access to technology and extension services; access to finance; demographic, economic and socio-cultural conditions; availability of specialized education among others. Farming is one of the main employment sectors in Bulgaria's rural areas. 32% of the jobs are in the farming sector. The activities adding value to the production, like processing, direct marketing etc. are not well developed. The number of enterprises and industries operating in other sectors is very low. The small-scale farms are the main group that has an important role for the development of the agricultural and rural area in Bulgaria. This family business is officially engaged in one member of the family farm and required employment power by all others members. The small-scale farmers with agricultural education are very small. This type of farmers has mostly practical agricultural knowledge and experience and funds their investment costs with their own financial resources. This paper presents an exploration of the influence of "family" on structural changes in agriculture in Bulgaria in vegetable and mushroom production. The agri-food sector in Bulgaria is a key component of the national economy, accounting for over 9.8% of gross added value and approximately 21.7% of employment (MAF, 2014), as in the rural areas the percentages are higher (MAF, 2014). The sector is geographically dispersed with a dualistic structure characterized by a few big farms and a large number of small ones (91% of the farms in the country operate less than 5 ha of land, which results in cultivating 5.2% of the total utilized agricultural area and giving 8.7% of total production volume). Also, it is recognized that horizontal and vertical networks within the food supply chain in Bulgaria are weak. Farmer participation in farmer's groups and producer organizations is very limited. Most of them, particularly in the

fruit and vegetables sub-sector, do not have preliminary negotiations and/or contracts with, processors, etc. The direct sales of agricultural and food products and local product marketing are in the initial phase and still need to be developed, as do the necessary preconditions, such as market and transport infrastructure, appropriate legislative.

Keywords: Agricultural holding, agri-food, small-scale farm, family farming.

Introduction

Agricultural holding is defined as an independent farming business meeting one of the following criteria: manages 0.5 ha of utilized agricultural land; or 0.3 ha of arable land; or 0.2 of natural grassland; or 0.1 ha of vegetables, berries, orchards, vineyards, nurseries, tobacco, hops, seed and seedlings, nowers, essential oil crops and medicinal crops, mushrooms, etc.; or 0.05 ha crops under glass; or I cow; or I buffalo-cow; or 2 cattle; or 2 buffaloes; or I breeding sire; or 1 sow; or 5 pigs; or 5 ewes; or 2 she-goats; or 2 beasts of burden; or 50 laying hens; or 100 chicks for fattening; or 30 other poultry species; or 10 she-rabbits; or 10 bee families; or I 000 quails or other species (Ministry of Agriculture and Forestry (MAF). "'Identification and assessment of different governing modes for land supply, and finance supply, and marketing in Bulgarian farms is made by Bashev and Kagatsume (2004, 2003, 2002). Study on forms for labor supply is done by Bashev (2003) while overall presentation of goveming stcture in Bulgarian agriculture can be found in Basehev and Tsuji (200I). Bachev2005.

The Strategic Approach to EU Agricultural Research and Innovation published in July 2016 recognizes that "Food supply chains operate in an increasingly complex and dynamic environment characterized by new demands, new technologies-sometimes game-changing, changing structures and co-operation modes. Food demand by consumers is evolving in terms of various quality attributes (authenticity, standards, certification, origin, healthiness, local or regional supply, etc.).

Indeed, the whole food chain is still affected by unhealthy, outdated and unsustainable protocols with enormous consequences for the whole socio-economic system. In order to obtain a general improvement of the food chain, science-based food and farm policies should be put in place, allowing improving the food quality and the production performances, to eliminate the associated risks and to create positive health and environmental impacts. A major drawback for a sustainable and performing food chain is the difficulties in communication and interactions among all the food chain actors". (https://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/agri_strategypaper_web_1.pdf)

Farmers are getting older. There is a need to encourage youth and new entrants and also more women. In 2013, of the 10.8 million farm managers in the EU-28, only 6% of the total aged less than 35 years old. (*source*: Eurostat 2016) The highest share of the farm managers was recorded among those aged 65 and above (31.1% of the total). Between 2005 and 2013, the share of young farm managers in the total number of managers in the EU fell slightly, as it had stood at 6.9% for the EU-28 (excluding Croatia); the share of farmers aged 65 years and above also fell during this period, while the largest relative gain was recorded among farmers aged between 55 and 64, as their share of the total number rose from 22.2% of all EU-28 (again excluding Croatia) farm managers in 2005 to 24.7% by 2013.

Elderly farm managers tend to work on very small and small farms. By contrast, young farmers tend to manage larger farms. This may be linked to the fact that they are more likely to have higher levels of educational attainment and to have followed professional training courses, which may lead to the introduction of new and innovative farming practices.

An analysis of the farm labor force by sex and by economic size is not available for the non-regular labor force. In 2013, the EU-28's regular agricultural labor force was two thirds male. Men accounted for more than four fifths of the regular labor force in Ireland and Cyprus, with their share peaking at 88.1% in Malta. At the other end of the range, there was almost parity between the sexes in Latvia, Lithuania and Poland, as the male share of the regular labor force was situated within the range of 53.7–54.9%.

The report of the Agriculture Markets Task Force of 14 November 2016 concludes that the policy framework governing the supply chain "can and should be further improved with new rules at EU level to cover certain Unfair Trading Practices (UTPs), as well as the implementation of effective enforcement regimes in Member States such as through the use of an adjudicator, increased market transparency, enhancing cooperation among farmers, facilitating farmers' access to finance and improving the take-up of risk management tools".

Small farms have always been a cornerstone of agricultural activity in the EU. There is no fixed definition as to what constitutes a 'small' or a 'large' farm. In addition, there is no fixed definition as to when a small farm is rather a subsistence household producing food for its own consumption and is thus not an economic unit. For the purpose of the analyses presented in this article no cut-off thresholds for identifying subsistence households have been introduced. There are two main criteria that have been used to delineate farm size: the majority of the article is based on a classification of farms in economic terms based on their standard output, while the final part of the analysis provides an alternative measure, based on the utilised agricultural area (UAA).

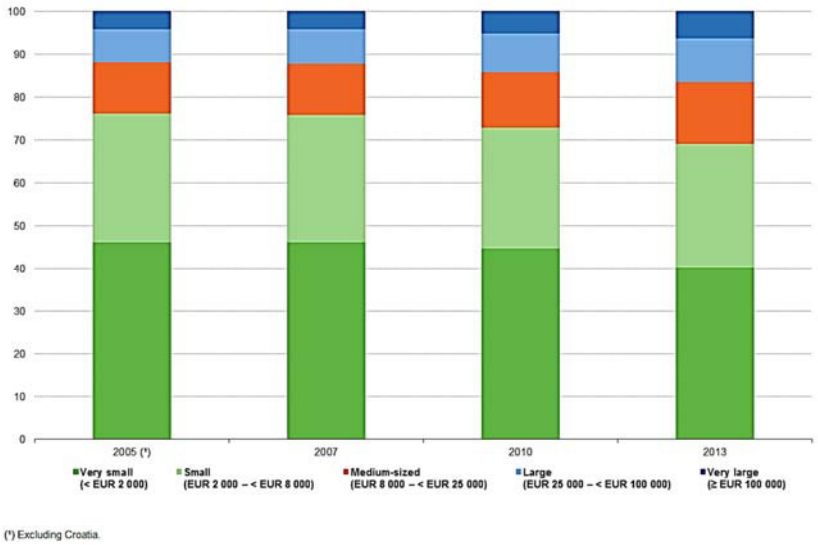
The **standard output** of an agricultural product (crop or livestock), abbreviated as **SO**, is the average monetary value of the agricultural output at farm-gate price, in euro per hectare or per head of livestock. There is a regional SO coefficient for each product, as an average value over a reference period (5 years, except for the SO 2004 coefficient calculated using the average of 3 years). The sum of all the SO per hectare of crop and per head of livestock in a farm is a measure of its overall economic size, expressed in euro. The standard output is used to classify agricultural holdings by type of farming and by economic size.

Small farms support rural employment and can make a considerable contribution to territorial development, providing specialist local produce/products as well as supporting social, cultural and environmental services. Although the EU's agricultural sector remains characterised by a high number of very small farms, there is a tendency towards consolidation, with large farms accounting for a growing proportion of the land farmed in the EU.

For several decades, the number of farms in the EU has followed a downward path. Between 2005 and 2013 the total number of farms in the EU-28 (excluding Croatia) fell by 26.2 %, equivalent to an average decline of 3.7 % per annum. The largest declines in farm numbers were recorded in Slovakia (-12.5 % per annum), Bulgaria (-8.9 % per annum), Poland (-6.6 % per annum), Italy (-6.5 % per annum), the Czech Republic (-5.8 % per annum), Latvia (-5.5 % per annum) and the United Kingdom (-5.3 % per annum). By contrast, Ireland was the only EU Member State to record an increase in its number of farms between 2005 and

2013, with an average increase of 0.6 % per annum, equivalent to an additional 7 thousand farms. Figure 1.

There was little change in the utilised agricultural area farmed in the EU during recent years, as the average rate of change was 0.1 % per annum for the EU-28 (excluding Croatia) between 2005 and 2013. The total utilised agricultural area for the EU-28 stood at 174.6 million hectares in 2013. This relatively stable agricultural area, coupled with a declining number of farms has resulted in farms across the EU becoming, on average, bigger. Some of the fastest changes were recorded among those Member States that joined the EU in 2004 or more recently, as a process of structural adjustment took place.



(*) Excluding Croatia.

Source: Eurostat (ef_kvecsleg).

Figure 1. Share of total number of farm holdings, by economic size of farm, EU-28, 2005-2013 (% of total)

The structure of agriculture in the EU Member States varies depending upon differences in geology, topography, climate and natural resources, as well as the diversity that is found in terms of (former) political and economic systems, regional infrastructure and social customs. The differences witnessed between Member States in relation to the average size of their farms is however largely linked to ownership patterns, as those countries with high numbers of small farms are characterised by semi-subsistence, family holdings, whereas larger farms are more likely to be corporately-owned, joint stock and limited liability farms, or cooperatives.

Romania accounted for one third (33.5 %) of the total number of farms in the EU-28 in 2013, while Poland (13.2 %) was the only other EU Member State to record a double-digit share; many of the farms in these two Member States can be considered subsistence households. In terms of utilised agricultural area, most agricultural land was found in France (15.9 % of the EU-28 total in 2013), followed by Spain (13.3 %), while the United Kingdom (9.9 %), Germany (9.6 %), Poland (8.3 %) and Romania (7.5 %) had the next highest shares.

Economic size of farms

The majority of this article analyses the structure of farms in the EU in economic terms, based on their standard output, a measure of the monetary value of agricultural output at farm-gate prices for crops and livestock; note that the standard output does not take account of input costs and therefore does not provide an indication as to the profitability of farms. Five different classes have been defined according to their economic size: very small; small; medium-sized; large; and very large. Note that the final part of the main statistical findings in this article provides an alternative analysis, based on the physical size of farms, as measured by their utilised agricultural area.

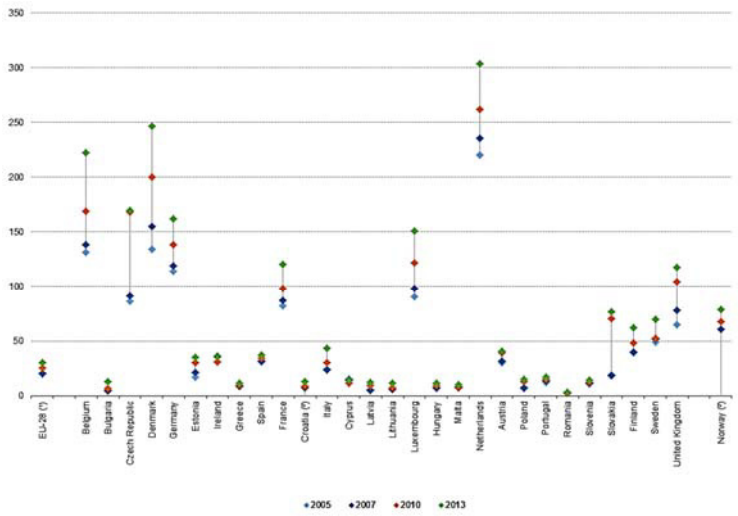
In 2013, there were 4.4 million farms in the EU-28 that had a standard output that was less than EUR 2 000, while a further 3.1 million farms had an output within the range of EUR 2 000–EUR 8 000. Together these very small and small farms accounted for more than two thirds (69.1 %) of all the farms in the EU-28 (see Figure 1), whereas their share of standard output was considerably lower, at 5.0 %. This may be explained, at least in part, by the relatively high number of very small, subsistence households in the EU (see below for more information concerning farms where more than 50 % of their output is self-consumed).

By contrast, there were 680 thousand farms in the EU-28 with a standard output of at least EUR 100 000; these very large farms accounted for 6.3 % of the total number of farms and for 71.4 % of the agricultural standard output in 2013. It should be noted that while many of these farms with a high level of standard output occupied considerable areas of agricultural land, there are specific types of farming which may have considerable output in monetary terms from very small areas of agricultural land, for example, horticulture or poultry farming.

The standard output of farms in the EU increased by almost 56 % between 2005 and 2013

The Netherlands recorded the largest farms, generating an average of EUR 303 800 of standard output (Figure 2); note that many farms in the Netherlands are specialized in growing high value products, for example, flowers, fruit and vegetables (often under glass). The average economic size of farms was also relatively high in Denmark, Belgium, the Czech Republic, Germany, Luxembourg, France and the United Kingdom, ranging from EUR 246 700 to EUR 117 800; none of the other EU Member States recorded an average economic size of more than EUR 80 000 per farm.

At the other end of the range, there were 10 EU Member States where the average economic size of farms was below EUR 15 000, all but one of these recorded a ratio in 2013 that was within the range of EUR 10 000–15 000, the exception being Romania, where farms averaged EUR 3 300 of standard output. As such, comparing the results for the Netherlands with those for Romania, the average economic size of farms in the former was approximately 92 times larger than the latter.



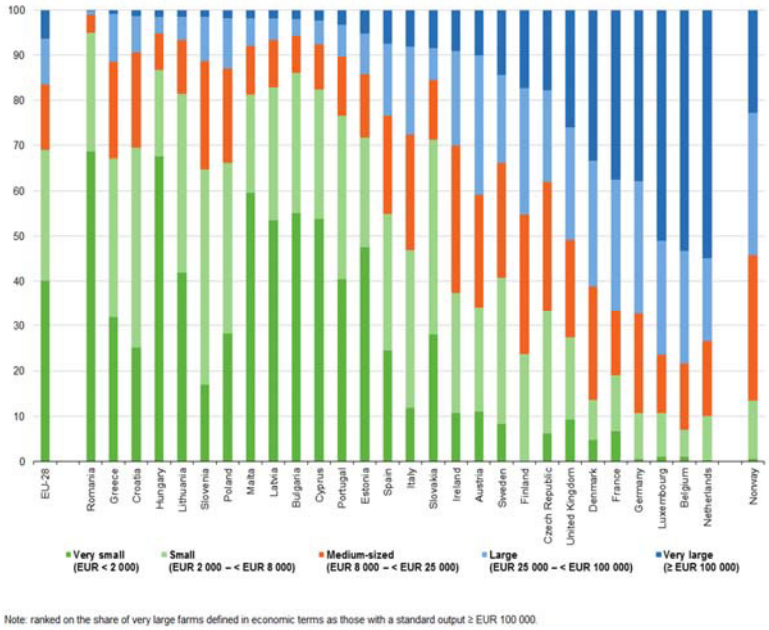
Note: the economic size is measured in relation to the standard output.
(*) 2005: EU-27.
(*) 2005: not available.

Source: Eurostat (ef_kvftaa).

Figure 2. Average economic size of farm holdings, 2005-2013 (thousand EUR)

High proportion of farms in the Benelux were very large. There were considerable divergences between the EU Member States as regards the economic size of their farms in 2013 (see Figure 3). While 6.3 % of the total number of farms in the EU-28 were considered as being very large as a result of generating a standard output of at least EUR 100 000, this share was considerably higher in several Member States. Indeed, more than half of all the farms in the three Benelux Member States generated at least EUR 100 000 of standard output, peaking at 54.8 % in the Netherlands, while very large farms accounted for the highest share of the total number of farms in the United Kingdom (26.0 % of the total), Denmark (33.2 %), France (37.5 %) and Germany (37.8 %).

By contrast, there were nine EU Member States where the very small farms with less than EUR 2 000 of standard output were the most common economic size of farms. These farms were particularly prevalent in Romania (68.7 % of all farms) and Hungary (67.6 %), while they also accounted for more than half of the total number of farms in Malta, Bulgaria, Cyprus and Latvia. As such, farms in the western EU Member States tended, on average, to be much larger in economic size than those in many of the Member States that joined the EU in 2004 or more recently.



Note: ranked on the share of very large farms defined in economic terms as those with a standard output ≥ EUR 100 000

Source: Eurostat (ef_kvecsleg).

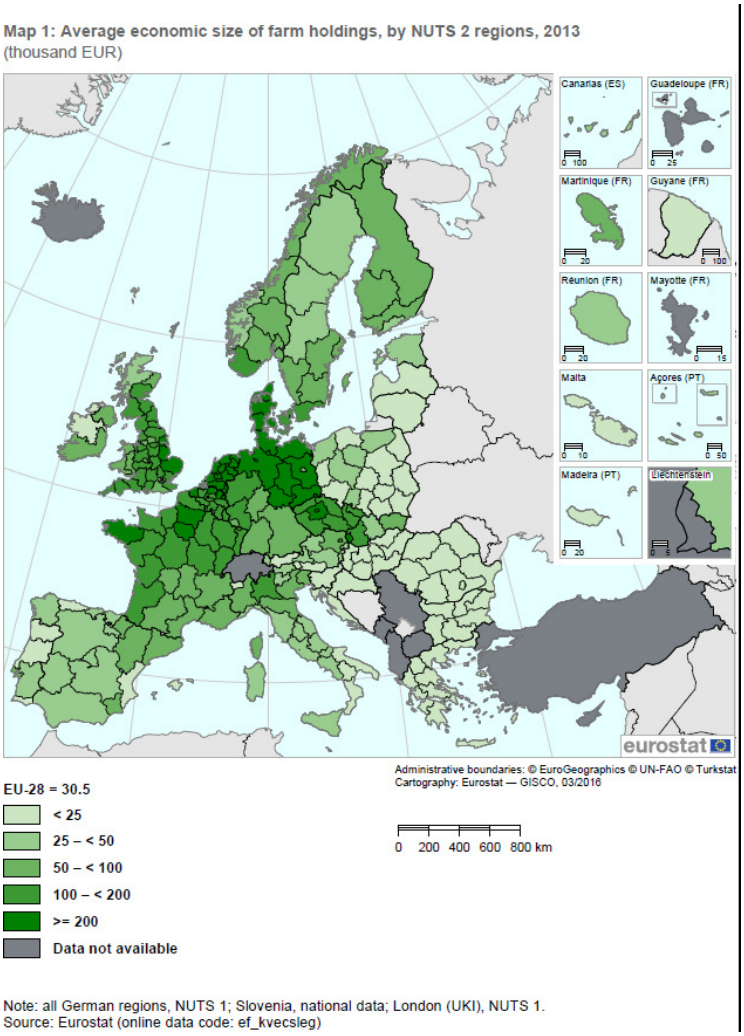
Figure 3. Share of total number of farm holdings, by economic size of farm, 2013 (% of total)

On average, farms in the German region of Sachsen-Anhalt had the highest standard output

Map 1 shows the average economic size of farms for NUTS level 2 regions. There were 35 regions across the EU-28 where the standard output per farm averaged at least EUR 200 000 (as shown by the darkest shade in the map). These regions were located in the Netherlands (every region except for Zeeland), Germany (eight NUTS level 1 regions), Belgium (four regions), Denmark, France and the United Kingdom (three regions each), the Czech Republic (two regions) and Slovakia (one region).

Standard output per farm peaked at EUR 541 800 in the German region of Sachsen-Anhalt, while two other German regions — Mecklenburg-Vorpommern and Thüringen — were also present among the top five regions in the EU with the largest farms in economic terms; they were joined by the Czech capital city region of Praha and the Dutch region of Zuid-Holland.

At the other end of the range, there were 10 regions in the EU-28 where farms on average generated EUR 5 000 or less of standard output in 2013. All eight of the Romanian regions figured in this list, along with the Greek island region of Ionia Nisia and the Polish region of Podkarpackie. The region with the lowest level of standard output per farm (EUR 2 600) was Sud-Vest Oltenia in Romania.



Source: Eurostat (ef_kvecsleg).

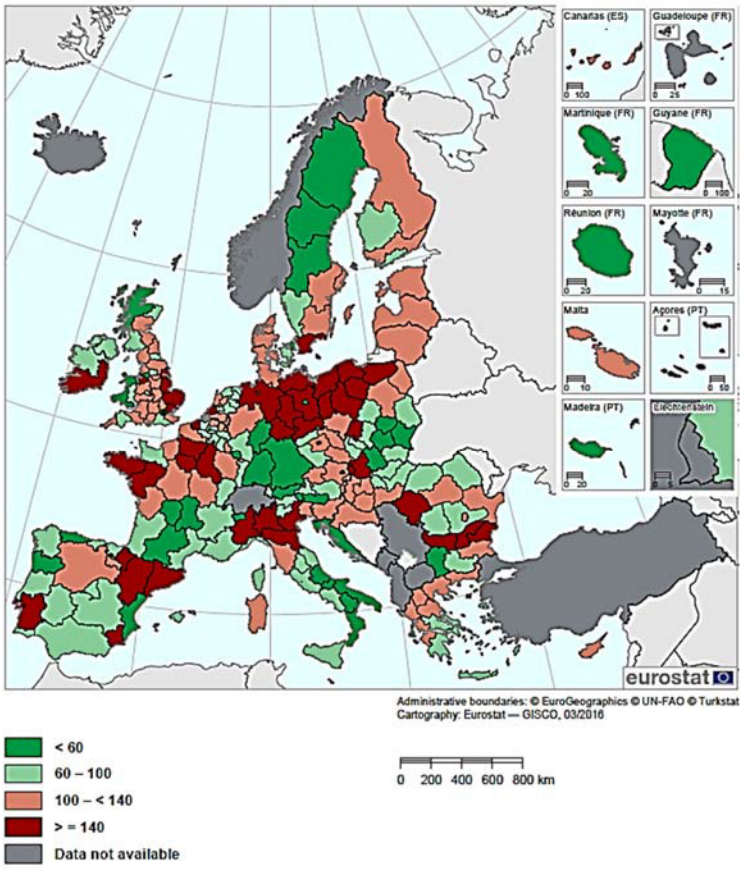
Map 1. Average economic size of farm holdings, by NUTS 2 regions, 2013 (thousand EUR)

The information presented in Map 2 is based on an alternative analysis of the economic size of farms.

In several of the EU Member States, farms in the capital city region often had a relatively high level of standard output compared with the national average; this was particularly the case in the Czech Republic, Austria, Portugal and Slovakia (note that these capital city

regions may also contain land that encircles the capital city itself) and the values recorded in some of these regions may be linked to farmers providing high value horticultural products to local markets.

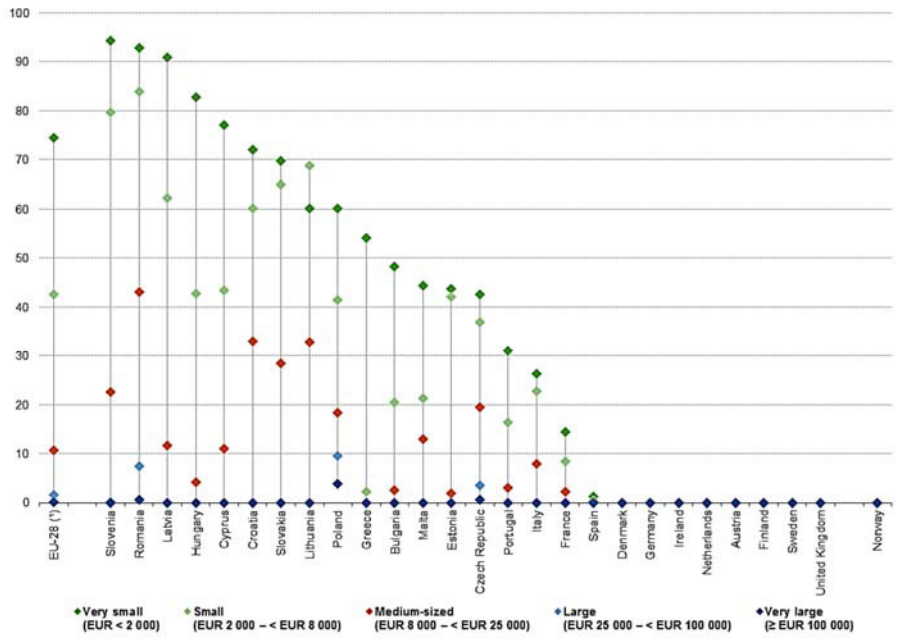
Map 2: Average economic size of farm holdings, by NUTS 2 regions, 2013
(national average = 100)



Note: all German regions, NUTS 1; Slovenia, national data; London (UKI), NUTS 1.
Source: Eurostat (online data code: ef_kvecsleg)

Almost three quarters of farms in the EU that are very small in economic terms were subsistent. Many small farms are characterised by the fact that farm holders may struggle to make a living. A characteristic of very small farms is that they are often subsistence households. Figure 4 shows the proportion of farms where more than half of the production of the farm is self-consumed, the information is once again analysed according to the economic size of farms. Across the whole of the EU-28, almost three quarters (74.4 %) of very small farms (in economic terms) consumed more than half of their own production in

2013, while just over two fifths (42.6 %) of small farms were classified as subsistent. A high proportion (the share rising above 90 %) of the very small farms in Latvia, Romania and Slovenia were subsistence households.



Note: ranked on the share of very small farms defined in economic terms as those with a standard output < EUR 2 000. Belgium and Luxembourg: not available.
(*) Excluding Belgium and Luxembourg.

Source: Eurostat (ef_kvecsleg).

Figure 4. Share of farm holdings with more than half of production being self-consumed, by economic size of farm, 2013 (%)

The lower threshold shown in the table refers to the level of standard output below which the cumulative output of the smallest farms equates to one fifth of the national total. Smallest farms in Slovakia that collectively generated one fifth of the total standard output made up 96 % of the number of share also over 90 % in Bulgaria where the number of farms below the lower threshold(% of all farms) present 93.6%; the upper threshold shows the level of standard output above which the cumulative output of the largest farms also equates to one fifth of the national total, while in BG present only0.1%. Table 1:

Table 1. Distribution of farm holdings, by economic size of farm, 2013

	Average standard output per holding (EUR)	Lower threshold (EUR) (1)	Average standard output per holding for farms below the lower threshold (EUR)	Number of farms below the lower threshold (% of all farms)	Upper threshold (EUR) (2)	Average standard output per holding for farms above the upper threshold (EUR)	Number of farms above the upper threshold (% of all farms)	Ratio of number of farms below the lower threshold to number of farms above the upper threshold
Belgium	222 628	204 805	68 055	65.4	1 063 572	1 732 218	2.6	25.5
Bulgaria	13 112	21 252	2 801	93.6	1 136 028	2 133 941	0.1	780.2
Czech Republic	169 434	374 061	36 874	91.9	4 466 029	6 912 652	0.5	187.5
Denmark	246 728	378 054	59 997	82.2	2 343 481	3 674 177	1.3	61.4
Germany	162 269	151 375	45 028	72.1	1 465 853	2 892 182	1.1	64.3
Estonia	35 250	85 892	7 502	94.0	2 338 574	4 403 482	0.2	587.3
Ireland	35 908	29 469	9 732	73.8	277 942	605 813	1.2	62.0
Greece	11 421	10 023	3 169	72.1	81 332	175 383	1.3	55.4
Spain	37 284	46 489	8 807	84.7	948 095	2 159 638	0.4	241.9
France	120 528	116 138	36 193	66.6	562 725	1 001 382	2.4	27.6
Croatia	12 888	9 561	3 470	74.3	332 825	1 471 381	0.2	412.6
Italy	43 346	45 095	10 537	82.3	1 307 613	3 238 192	0.3	304.7
Cyprus	14 001	22 615	3 050	91.8	1 115 372	2 947 655	0.1	918.1
Latvia	12 103	17 179	2 670	90.7	1 050 328	2 624 553	0.1	1 007.3
Lithuania	11 171	9 658	2 643	84.5	856 560	2 086 702	0.1	768.4
Luxembourg	151 089	146 390	50 639	59.6	433 454	655 877	4.6	12.9
Hungary	11 352	23 242	2 405	94.4	2 578 865	5 242 525	0.0	2 360.3
Malta	10 336	15 871	2 306	88.0	325 375	528 100	0.4	220.1
Netherlands	303 760	295 081	87 451	69.5	2 283 829	4 101 551	1.5	46.9
Austria	40 384	38 355	11 663	69.3	224 306	398 359	2.0	34.1
Poland	15 254	13 507	3 951	77.2	305 404	843 231	0.4	214.5
Portugal	17 053	22 183	3 842	88.7	625 199	1 431 537	0.2	369.8
Romania	3 303	2 842	856	77.2	380 088	1 104 177	0.1	1 286.3
Slovenia	13 944	9 397	4 002	69.7	147 229	368 586	0.8	91.7
Slovakia	76 901	375 437	16 053	95.8	3 578 628	6 886 134	0.2	435.3
Finland	61 568	57 512	17 000	72.4	446 295	796 518	1.6	46.7
Sweden	69 207	89 818	16 375	84.5	1 188 940	2 664 026	0.5	162.6
United Kingdom	118 619	136 271	30 049	79.0	1 311 523	2 720 761	0.9	90.7
Norway	78 322	71 069	22 343	70.1	457 061	865 033	1.8	38.7

(1) Individual farms with a standard output below this threshold together accounted for 20 % of the total standard output.
(2) Individual farms with a standard output above this threshold together accounted for 20 % of the total standard output.

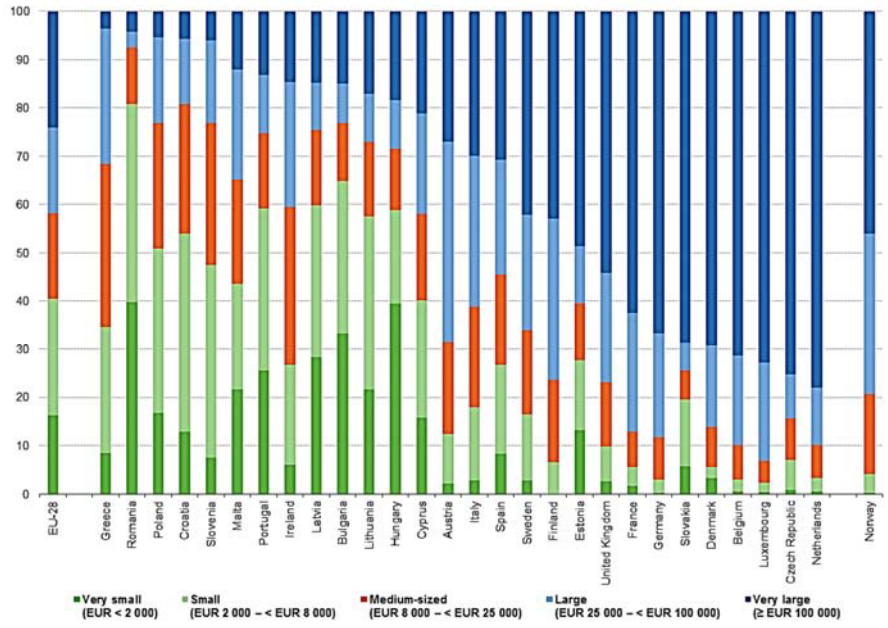
Source: Eurostat (ef_kvecsleg) and Eurostat (FSS — farm structure survey).

Structure of the farm labour force

There were 22.2 million persons in the EU-28's farm labour force in 2013. Although engaged in production on farms, these people did not necessarily work on a full-time basis.

An analysis, based on the economic size of farms, shows that small farms (with a standard output of EUR 2 000 – < EUR 8 000) accounted for almost one quarter (24.2 %) of the EU-28's agricultural labour force (composed of sole holders, other family labour and non-family labour) that worked directly on farms; an identical share was recorded for very large farms (with a standard output of ≥ EUR 100 000), with the shares of total regular labour input for the other size classes all quite similar, between 16.3 % and 17.7 % — see Figure 5.

In Bulgaria (33.3 %), very small farms (with a standard output of < 2 000 EUR) accounted for a higher share of labour input than farms of any other size class.



Note: ranked on the share of very large farms defined in economic terms as those with a standard output ≥ EUR 100 000;
farm labour force directly working on farms includes sole holders, family members and non-family labour.

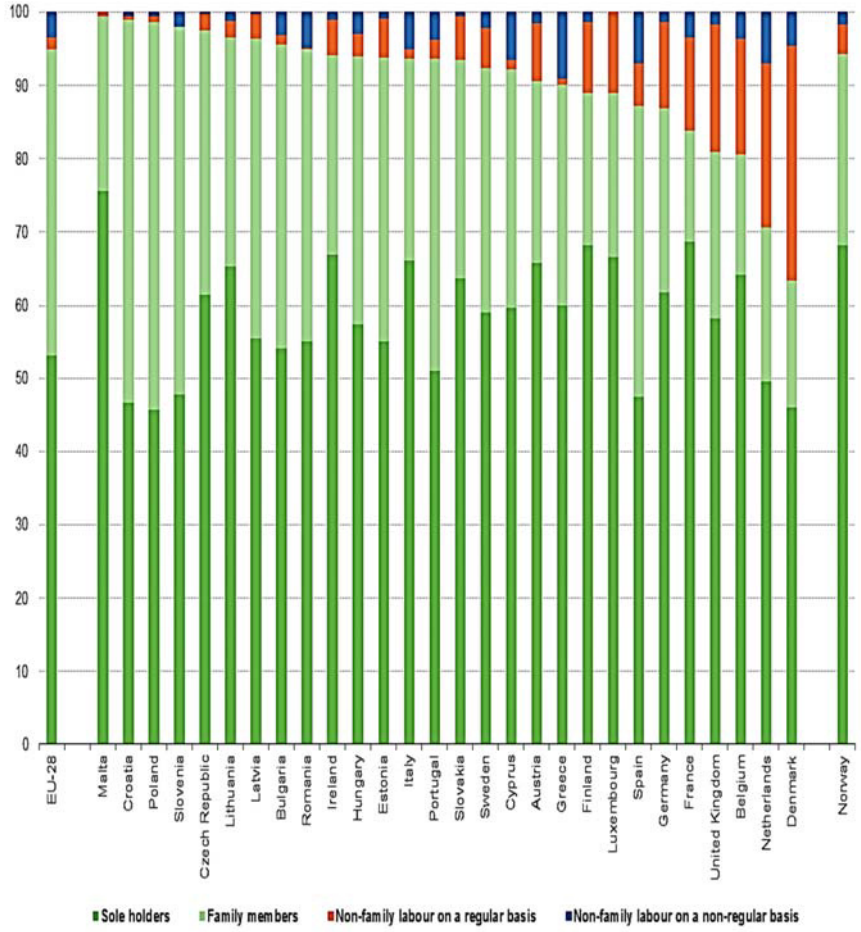
Source: Eurostat (ef_kvecsleg).

Figure 5. Share of the labour force directly working on farms, by economic size of farm, 2013 (% of total AWUs)

Farming is a predominantly family activity within the EU

As noted above, very small and small farms (in economic terms) are often unable to provide a viable income for farmers and their families. As such, they are often run either as part-time operations, in conjunction with other gainful activities, or to supplement pensions; these small farms are typically characterised by a high share of family labour. On larger farms it is more common to find that a higher share of the labour force is engaged on a full-time basis, and these farms are also more likely to employ non-family labour. Figure 6.

Approximately three quarters (76.5 %) of EU-28's agricultural labour force in 2013 was provided by family members (either sole holders or other family members working on the farm).



Note: for this analysis very small and small farms are defined in economic terms as those with < EUR 8 000 of standard output; farm labour force directly working on farms includes sole holders, family members and non-family labour; ranked on the share of sole holders and family members.

Source: Eurostat (ef_olfftecs).

Figure 6. Share of the labour force directly working on very small and small farms in economic terms, by type of labour, 2013 (% of total labour force in AWUs)

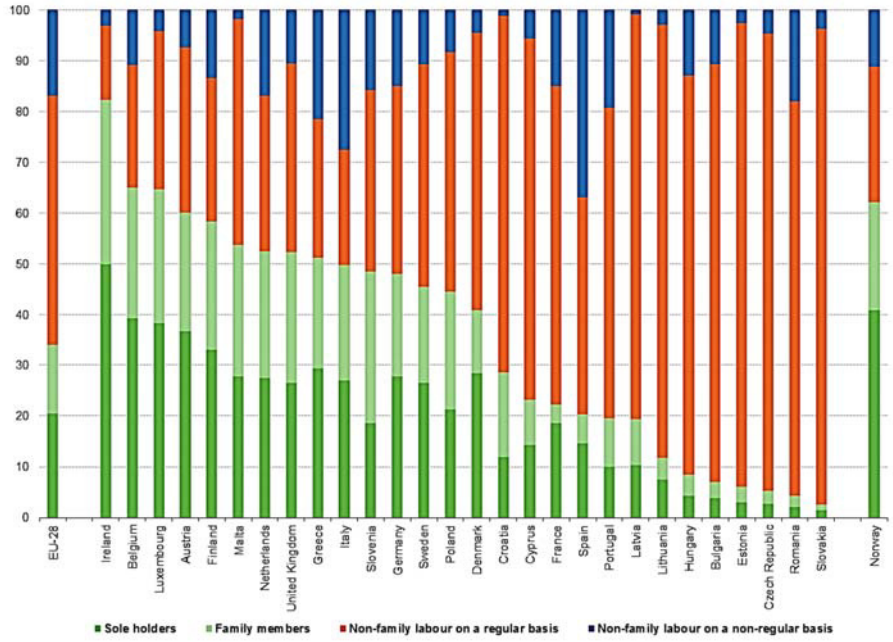
Almost half of the labour force on very large farms in the EU was accounted for by non-family labour.

Economies of scale and a higher degree of mechanisation may encourage some very large farms (in economic terms) to replace labour by capital and this results in quite different patterns of employment distribution.

Farms with only family workers (in other words, those where 100 % of the labour input on the farm was provided by family members) accounted for 93.7 % of the total number of farms in the EU-28 in 2013. Farms with only family workers used almost four fifths (78.8 %) of the total regular agricultural labour force, they cultivated more than half (54.3 %) of the total agricultural area and reared more than half (52.1 %) of all livestock.

In the EU-28, non-family members accounted for almost two thirds (65.8 %) of the labour input in very large farms in 2013 (Figure 7). Almost half (49.0 %) of the labour force in very large farms was composed of non-family workers employed on a regular basis, their share being almost three times as high as that for non-family labour employed on a non-regular basis (16.9 %).

Non-family labour accounted for more than half of the agricultural labour force on very large farms. In 2013, this was most notably the case in Bulgaria, where non-family labour accounted for more than 90 % of the labour input. Family memebers acted in BG is very smal part in comparing with non-family labour on e regular basis.



Note: for this analysis very large farms are defined in economic terms as those with ≥ EUR 100 000 of standard output; farm labour force directly working on farms includes sole holders, family members and non-family labour; ranked on the share of sole holders and family members.

Source: Eurostat (ef_olfaa) and Eurostat (Farm Structure Survey), Eurostat (ef_olfftecs).

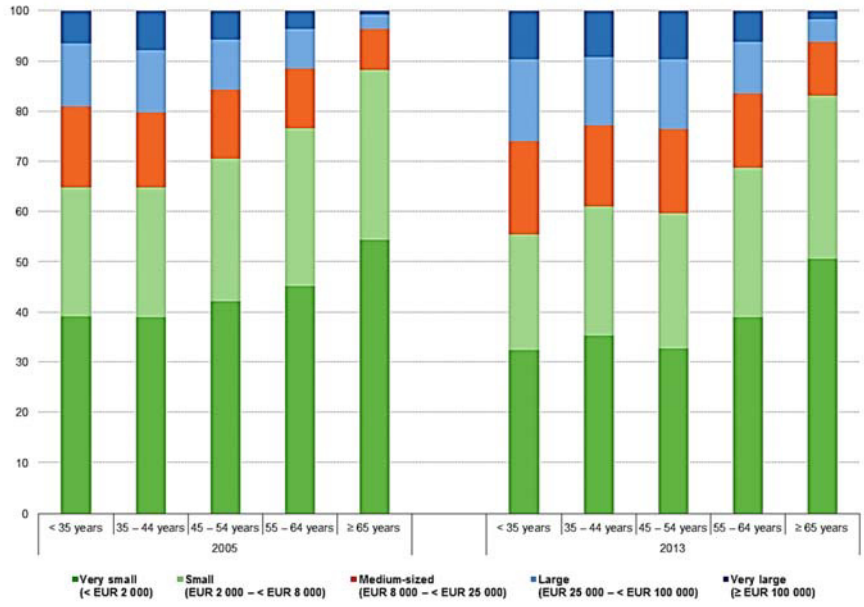
Figure 7. Share of the labour force directly working on very large farms in economic terms, by type of labour, 2013 (% of total labour force in AWUs)

Older farm managers tended to work in very small and small farms

Of the 10.8 million farm managers in the EU-28's agricultural sector in 2013, there were relatively few young farm managers. Those aged less than 35 years accounted for 6.0 % of the total, while the highest share of farm managers was recorded among those aged 65 and above (some 3.3 million managers, or 31.1 % of the total). Agriculture is the economic sector in which it is most common to find people continuing to work after the age of 65.

Elderly farm managers tend to work on very small and small farms (measured in economic terms) which are characterised by low levels of income and subsistence households; elderly farmers are less likely to have participated in professional training. While these very small and small farms tend to record relatively low levels of income, productivity and profitability, some play an important role in reducing the risk of rural poverty, providing additional income and food.

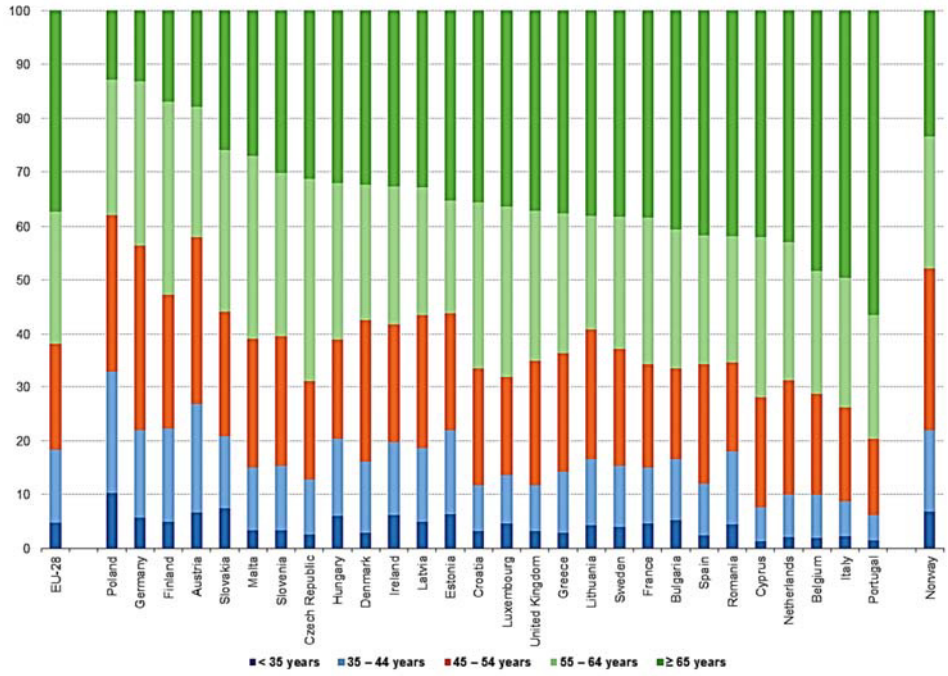
By contrast, young farmers tend to manage larger farms (in economic terms): this may be linked to the fact that they are more likely to have higher levels of educational attainment and to have followed professional training courses, which may lead to the introduction of new and innovative farming practices. As can be seen in Figure 8, during the period from 2005 to 2013 the share of young farm managers (aged less than 35 years) who were managing medium-sized, large and very large farms increased. The share of young farm managers who were managing smaller farms (measured in economic terms) was consequently lower.



Note: 2005, excluding Croatia.

Figure 8. Age of farm managers, by economic size of farm, EU-28, 2005 and 2013 (% of total)

In 2013, the share of those aged 65 and above in the total number of farm managers of small and very small farms peaked at 56.4 % in Portugal, while shares of more than 40.0 % were also recorded in Bulgaria. Figure 9:

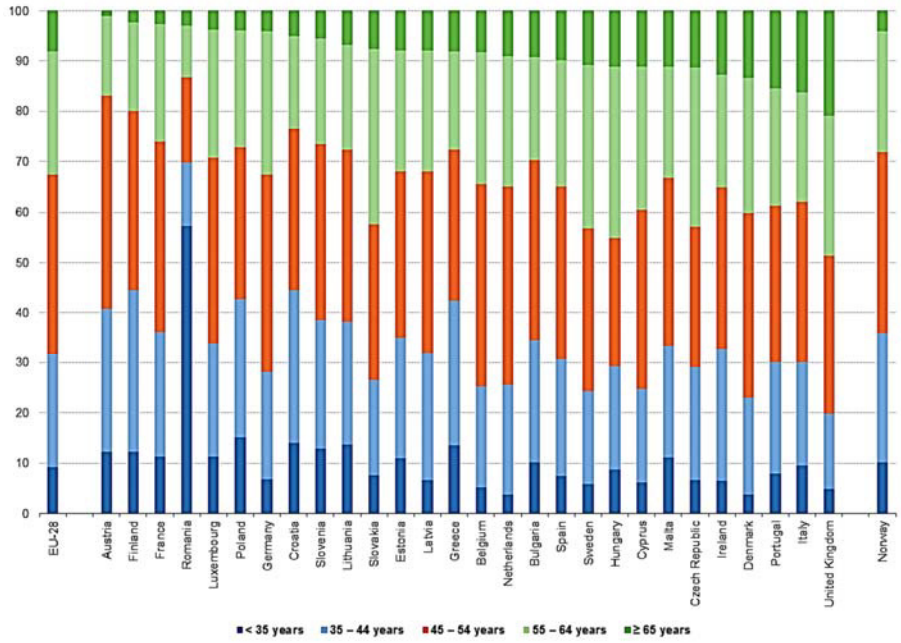


Note: for this analysis very small and small farms are defined in economic terms as those with < EUR 8 000 of standard output.
Ranked on the share of those aged 65 years or more.

Source: Eurostat (ef_olfaa) and Eurostat (Farm Structure Survey).

Figure 9. Age of farm managers on very small and small farms in economic terms, 2013 (% of total)

While more than half of the managers of very large Romanian farms were aged less than 35 years.In 2013, more than one third (35.7 %) of EU-28 farm managers working in very large farms were aged 45-54 years, the highest share for any of the age groups shown in Figure 10.



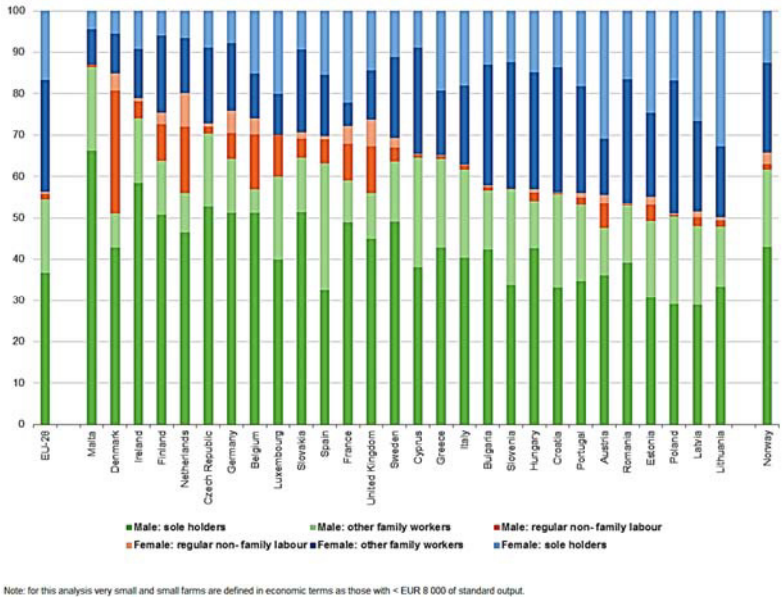
Note: for this analysis very large farms are defined in economic terms as those with ≥ EUR 100 000 of standard output.
Ranked on the share of those aged 65 years or more.

Source: Eurostat (ef_olfaa) and Eurostat (Farm Structure Survey).

Figure 10. Age of farm managers on very large farms in economic terms, 2013 (% of total)

There was a higher propensity for women to work on smaller farms.

The distribution of agricultural work between the sexes was somewhat more balanced in very small and small farms (measured in economic terms). In 2013, men accounted for 55.8 % of the EU-28's regular labour force in these farms. More than 60% of sole holders in Bulgaria are male, 30% other family workers are male, then less than10% are regular non-family member male and female figure 11.

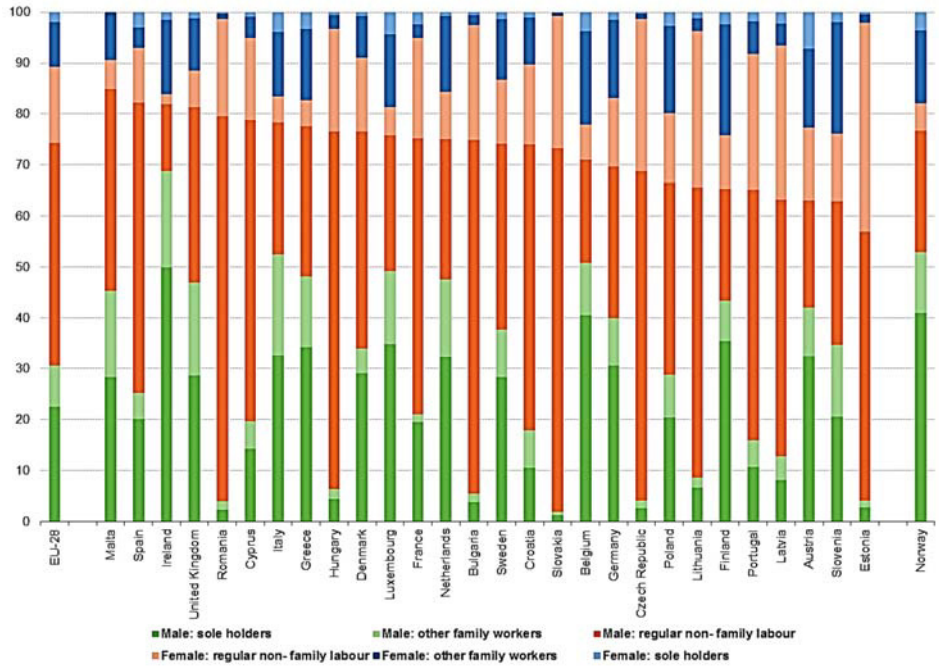


Source: Eurostat (ef_lflegecs).

Figure 11. Regular farm labour force on very small and small farms in economic terms, by sex, 2013 (% of regular labour force in AWUs)

Figure 12 shows a similar set of information for very large farms (again on the basis of the economic size of farms). The gender gap in these farms was more pronounced, as men accounted for almost three quarters (74.4 %) of the EU-28's regular farm labour force in 2013. It is also interesting to note a majority of the labour input for both of the sexes came from regular non-family employment.

Among the EU Member States, the regular male labour force in very large farms was consistently larger than the regular female labour force. Male regular non-family labour in Bg present more than 70% with less than 15% for female. The highest proportion for women working in very large farms was recorded in Estonia, where the regular female labour force represented 43.0 % of the total.



Note: for this analysis very large farms are defined in economic terms as those with ≥ EUR 100 000 of standard output.

Source: Eurostat (ef_lflegecs).

Figure 12. Regular farm labour force on very large farms in economic terms, by sex, 2013(% of regular labour force in AWUs)

Conclusion

1. Farming is one of the main employment sectors in Bulgaria's rural areas. 32% of the jobs are in the farming sector. The activities adding value to the production, like processing, direct marketing etc. are not well developed. The number of enterprises and industries operating in other sectors is very low.
2. The small-scale farms are the main group that has an important role for the development of the agricultural and rural area in Bulgaria. This family business is officially engaged in one member of the family farm and required employment power by all others members. The small-scale farmers with agricultural education are very small. This type of farmers has mostly practical agricultural knowledge and experience and funds their investment costs with their own financial resources.
3. The agri-food sector in Bulgaria is a key component of the national economy, accounting for over 9.8% of gross added value and approximately 21.7% of employment (MAF, 2014), as in the rural areas the percentages are higher (MAF, 2014).
4. The sector is geographically dispersed with a dualistic structure characterized by a few big farms and a large number of small ones (91% of the farms in the country operate less than

5 ha of land, which results in cultivating 5.2% of the total utilized agricultural area and giving 8.7% of total production volume).

5. It is recognized that horizontal and vertical networks within the food supply chain in Bulgaria are weak. Farmer participation in farmer's groups and producer organizations is very limited. Most of them, particularly in the fruit and vegetables sub-sector, do not have preliminary negotiations and/or contracts with, processors, etc. The direct sales of agricultural and food products and local product marketing are in the initial phase and still need to be developed, as do the necessary preconditions, such as market and transport infrastructure, appropriate legislative .
6. The Programme for Rural Development of the Republic of Bulgaria 2014-2020 contains a number of measures and incentives for the development and strengthening of small farms. According Doitchinova et all 2017 *Moreover, a special thematic sub-program was developed, which includes two types of measures:*
   1. *Measures that are specific to the subprogram and only small farms may apply for them: consultancy services, management services and substitution services; Investments in tangible assets; Development of farms and enterprises.*
   2. *Measures involving specific components or priorities targeted at small farms: Transfer of knowledge and awareness actions; Creation of producer groups and organizations; Collaboration.*

The second group of measures is going to be implemented under the main program in order not to complicate the control of the implementation of the RDP and to not stop the union of small farms with other farmers and the construction of territorial or sectoral producer networks. Especially important for the development of small farms in both countries have joint activities in the field of realization of products, supplies of raw materials and other activities of common interest.. The establishment of a variety of network structures based on cooperation and collaboration can not only contribute to strengthening the capacity of small farms and increasing the incomes of their farmers, but also to sustainable rural development.

References

1. Bachev H, and M. Tsuji (200 I): Structures for Organization of Transactions in Bulgarian Agriculture, Journal of the Faculty of Agriculture of Kyushu University, No 46 (I), Fukuoka.
2. Bachev H. (2002): Restructuring of Bulgarian Agriculture, in Agricultural Restructuring and Environmental Issues in Eastern Europe under Transition, Edited by Masaru Kagatsume, Kyoto University, Kyoto.
3. Bachev H. and M.Kagatsume (2002): Study on Financial Supply in Bulgarian Farms, The Natural Resource Economics Review, No 8, Kyoto University, Kyoto.
4. Bachev H. (2003): Study on Labor Supply in Bulgarian Fan1lS, in Farm Management and Rural Planning No 4, Kyushu University, Fukuoka.
5. Bachev H. and M.Kagatsume (2003): Governing of Output Utilization III Bulgarian Farms, The Natural Resource Economics Review, No 9, Kyoto University, Kyoto.
6. Bachev H. and M.Kagatsume (2004): Governing of Land Supply in Bulgarian Farms, The Natural Resource Economics Review, No 10, Kyoto University, Kyoto 192.
7. Bachev H. and A. Peteers (2005): Framework for Assessing Sustainability of Fanns, in Farm Management and Rural Planning No 6, Kyushu University, Fukuoka.

8. Bachev H. (2005): Assessment of Sustainability of Bulgarian Farms, Proceedings of the XIth Congress of the EAAE,"The Future of Rural Europe in the Global Agri-Food System", Copenhagen, Denmark, August 24- 27, 2005.
9. Bachev Hrabrin 2005:Assessment of Farm Support Policies and Likely Impact of CAP Implementation on Farm Structures and Sustainability in Bulgaria Article in SSRN Electronic Journal · January 2005 https://www.researchgate.net/publication/256068293
10. Doitchinova J., R. Terziyska, A. Petrovic, M. Colic (2017): INCREASING THE COMPETITIVE POTENTIAL OF AGRICULTURAL HOLDINGS THROUGH COLLABORATION AND COOPERATION. Trakia Journal of Sciences, Vol. 15, Suppl. 1, pp. 71-76, 2017 Copyright © 2017 Trakia University Available online at: http://www.uni-sz.bg.
11. Hansen J. (1996): Is Agricultural Sustainability a Useful Concept, Agricultural Systems 50 Review of Agricultural Policies: Bulgaria (2000), OECD, Paris and Sofia.
12. Harizanova, H., Economic results agricultural activities of the semisubsistence farms in Bulgaria, Management and sustainable development, 3-4, 251-255, 2010.
13. Stojadinović Jovanović, S., Dašić, B., The importance of foreign direct investment for South East European countries' agriculture, Economics of agriculture, vol. 62, no. 3., pp. 661-676, 2015.
14. Ministry of Agriculture and Food, The Programme for Rural Development of the Republic of Bulgaria 2014-2020.
15. Ministry of Agriculture and Environmental Protection of Republic of Serbia (2014) Agriculture in the Republic of Serbia in 2013.
16. Munćan D.and Boțić P., Family farms – the factors of agricultural development in Serbia, 100 th Seminar EAAE, 2007.
17. Terziyska, R., Opportunities and effects of setting up organization of cherries producers in the Kyustendil region, Conference proceedings: Agribusiness and Rural Areas - present and future development, 212-219 pp, Varna 2015.
18. Zaimova, D., Cooperative models in the agricultural sector. Development perspectives and solutions across Europe (Italy and Bulgaria), LAP Lambert Academic Publishing, Germany, 2011.