

FARM SIZE AND SPECIALIZATION STRUCTURE IN THE EUROPEAN COUNTRIES IN THE YEAR 2020

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Abstract

The purpose of this article is to analyze the evolution of the areas cultivated in the conventional system, comparing the data at European and at the national level. With a solid foundation in analyzing data obtained from various agricultural organizations, this study aims to elucidate current trends and provide an in-depth understanding of how conventional agriculture is changing. The analysis regards the year 2020 for which Eurostat provided data which were used for identifying similarities and differences between different EU member states exploring the potential reasons for these variations. By analyzing these trends, the article seeks to identify the impact of conventional agriculture on the environment and human health, as well as how agricultural practices are changing to become more sustainable and less harmful. The conclusion is that agricultural structure of the countries of the European Union is extremely diverse, reflecting the traditions, economy, geographical conditions, agricultural policy and many other aspects specific to each member state. It is obviously needed to continue and intensify efforts for increasing farm size, modernizing technical endowment and improving efficiency in the agricultural sector in the EU, especially in countries with a high share of small farms.

Key words: conventional agriculture, farming systems, economic efficiency, agricultural trends

INTRODUCTION

Conventional agriculture, dominant for much of the last century, has been an efficient and productive way to meet the growing needs of the global population [10,15].

In essence, conventional agriculture refers to an intensive farming system that relies on the use of modern technologies, including mechanized irrigation, agricultural machinery, chemical fertilizers and pesticides [13, 24].

Although conventional agriculture has enabled increased food production worldwide, it has also been associated with several environmental and health problems [23].

These include soil erosion caused by intensive farming practices, water pollution from fertilizers and pesticides, loss of biodiversity caused by extensive monocultures, and pesticide resistance, an emerging problem that reduces the effectiveness of these chemicals and may lead to increased use [21, 22].

Despite these challenges, conventional agriculture remains an essential component of our food system [18].

At the European and national level, the areas cultivated in the conventional system still occupy a significant percentage of agricultural land [7].

However, it is clear that agriculture is in a process of transformation, with an increase in interest in sustainable and ecological agricultural practices [8, 9].

In this context, it is crucial to understand how the areas cultivated in the conventional system evolve, in order to anticipate the future directions of this vital field [11, 12, 26].

In the following sections, the study is focused on the evolution of conventionally cultivated areas at European and national level, trying to emphasize current and future trends.

MATERIALS AND METHODS

In the process of this research, it was adopted a rigorous methodology for data collection, analysis and comparison. The first step was to collect data from the Eurostat database, the main source of statistical data at the level of the European Union.

Once collected, the data were subjected to analysis, focusing on understanding the evolution over time of the areas cultivated in the conventional system, analyzing the trends and changes that have occurred over the years. The analysis involved comparing national and European data, identifying similarities and differences between them, and exploring potential reasons for these variations.

All these steps were carried out in a systematic and transparent manner to ensure the accuracy and relevance of the results. By adopting this approach, it is expected to obtain a clear and complete picture of the evolution of conventionally cultivated areas, both at European and national level.

RESULTS AND DISCUSSIONS

Diversity is a distinctive feature of European agriculture, and this is also reflected in the size of farms [17, 19]. In countries such as Belgium, Germany, Denmark, Estonia, France, Luxembourg, the Netherlands and Sweden, the share of farms with areas between 0-4.9 ha is lower, below 20%. This may suggest a trend towards larger, more mechanized and intensive farms in these countries, which may benefit from economies of scale [3].

In contrast, countries such as Bulgaria, Greece, Spain, Croatia, Italy, Cyprus, Hungary, Poland, Portugal and Slovenia have a higher share of small farms (0-4.9 ha), perhaps indicating a greater presence of family farming and subsistence [4, 5].

In particular, Cyprus (87.52%) and Portugal (73.39%) have a very high share of these small farms.

In the case of Romania, over 90% of farms have surfaces between 0-4.9 ha, the highest proportion among all the countries listed. This reflects a distinctive feature of Romanian agriculture, where small and very small farms, often subsistence or semi-subsistence, dominate the agricultural landscape [25].

Although these farms contribute to the maintenance of biological diversity and food security at the local level, they often face challenges related to productivity, market access and long-term sustainability [14, 16].

Therefore, the structure of farms and its evolution is a key issue for rural development and agricultural policies in Romania [20].

Romania has an agricultural sector dominated by small holdings, generally characterized by low economic efficiency.

Similarly, in Cyprus, 87.52% of farms are between 0-4.9 ha, suggesting a similar reliance on small-scale agriculture.

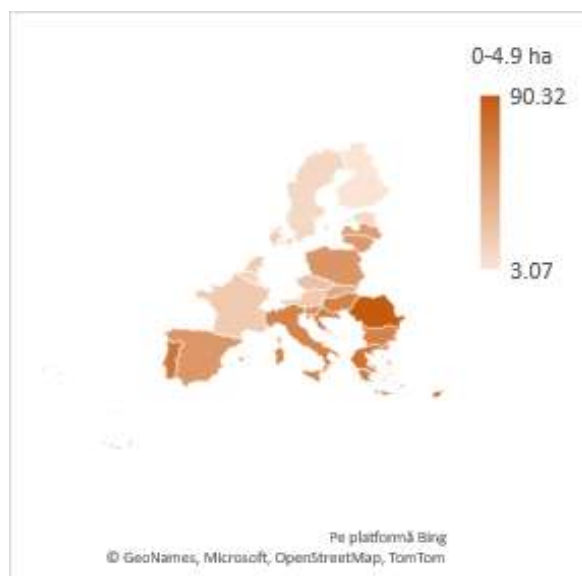


Fig. 1. The Share of farms with areas between 0-4.9 ha at the European level

Source: Own representation based on Eurostat data, 2023 [7].

In contrast, large farms, with areas over 100 ha, represent only 0.47% of the total in Cyprus and 0.55% in Romania.

On the other side, in countries such as France and Luxembourg, a significant share of large farms is observed. In France, farms with an area of more than 100 ha represent 26.14% of the total, while in Luxembourg, this percentage is even higher, reaching 27.66%. These countries have more developed and industrialized agricultural sectors, with large farms that can benefit from economies of scale and advanced technologies [2]. Germany shows a more balanced distribution of farms across size categories. The largest category is that of farms with 20-29.9 ha, which represents 20.01% of the total, followed by that of farms with 50-99.9 ha (17.03%). However, Germany also has a significant proportion of farms over 100 ha, at 14.52%, indicating a high diversity of farm structure.

In Bulgaria, although a large proportion of farms (64.03%) are small, with 0-4.9 ha, there is still an unexpectedly high percentage of farms over 100 ha, 5.75%, which suggests a trend of growth of large farms at the expense of small ones (Table 1).

Table 1. The Share of farms at the European level by farm size class (ha)

	0-4.9 ha	5-9.9 ha	10-19.9 ha	20-29.9 ha	30-49.9 ha	50-99.9 ha	≥100 ha
Belgium	13.53	13.00	17.53	12.44	17.08	18.86	7.56
Bulgaria	64.03	9.21	7.39	4.29	5.01	4.32	5.75
Czechia	25.25	15.19	14.87	8.02	8.89	10.48	17.30
Denmark	18.71	18.58	14.80	8.01	9.01	11.22	19.68
Germany	8.17	17.04	20.01	9.53	13.70	17.03	14.52
Estonia	10.38	25.59	19.88	8.80	9.15	9.15	16.97
Greece	74.04	13.39	7.02	2.54	1.92	0.90	0.20
Spain	51.55	14.42	11.32	5.51	5.58	5.52	6.10
France	19.65	8.72	9.41	6.15	10.11	19.82	26.14
Croatia	70.61	14.83	7.09	2.43	2.22	1.79	1.04
Italy	64.11	14.13	9.67	3.98	3.63	2.87	1.61
Cyprus	87.52	5.90	3.05	1.17	1.06	0.88	0.47
Latvia	46.96	19.12	14.37	5.35	4.73	4.06	5.42
Lithuania	50.17	19.90	12.92	4.66	3.86	4.10	4.38
Luxembourg	16.49	8.51	8.51	5.32	9.04	25.00	27.66
Hungary	64.89	11.82	8.42	3.55	3.48	3.44	4.41
Netherlands	19.95	13.09	15.39	10.64	17.14	17.97	5.85
Austria	20.81	17.00	23.00	13.71	14.52	8.81	2.17
Poland	52.29	21.70	14.79	4.71	3.41	2.03	1.08
Portugal	73.39	11.19	6.54	2.41	2.12	1.91	2.44
Romania	90.32	5.58	1.95	0.63	0.59	0.39	0.55
Slovenia	61.94	21.58	10.97	2.93	1.66	0.76	0.19
Slovakia	39.94	18.59	12.63	5.60	5.40	5.20	12.68
Finland	3.07	13.46	19.31	13.48	17.40	20.27	13.04
Sweden	10.75	25.17	20.22	9.27	9.78	11.16	13.68

Source: Eurostat, 2023 [6].

European agriculture is diverse and extensive, with a wide range of specializations reflecting the continent's geographical and climatic variety. In 2020, there were more than 1.6 million farms specializing in general field crops, representing a significant proportion of all farms in the EU. This is an indication of the central role of these crops in European agriculture.

Farms specializing in "cereals, oilseeds and protein crops" also constitute a major category, with more than 1.4 million farms registered in 2020. This underlines the importance of these crops for human and animal nutrition in Europe.

Farms specialized in olive cultivation, with almost 884,000 units, represent another important category, reflecting the relevance of this culture in certain regions of the EU, especially in the Mediterranean countries [27].

The number of farms specializing in fruit and citrus, vines, various permanent mixed crops and horticulture is also notable, ranging from approximately 200,000 to 500,000.

This indicates the diversity of EU agricultural production and the relevance of these sectors to rural economies.

When it comes to animal husbandry, there are several farms specializing in dairy (about 466,000), raising and fattening cattle (about 385,000), and raising sheep, goats and other grazing animals (about 328,000).

The number of farms specializing in raising pigs and poultry is significantly smaller, but still important.

There are also significant numbers of mixed crop and livestock farms (about 895,000) as well as farms specializing in mixed crops (about 464,000).

This underlines the existence of mixed production systems in EU agriculture.

In conclusion, the diversity of specialist farms in the EU reflects a wide range of production systems, responding to different market

demands, climatic and geographical conditions, as well as farmers' preferences and capacities (Figure 2.).

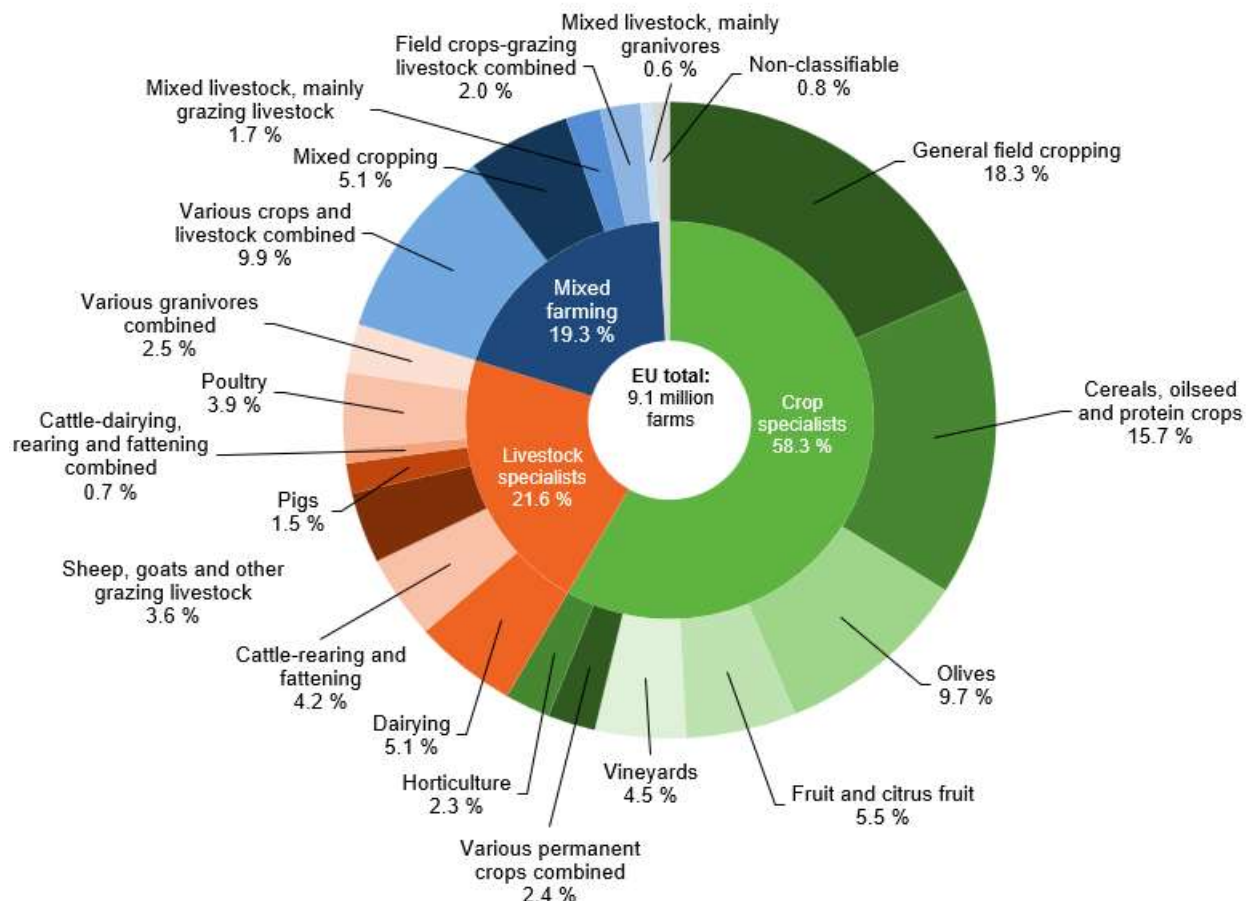


Fig. 2. Farms by type of specialisation (share of all EU farms, %, 2020)
 Source: Eurostat, 2023 [6].

CONCLUSIONS

Concluding the analysis of the presented data, it was noticed that the agricultural structure of the countries of the European Union is extremely diverse, reflecting the traditions, economy, geographical conditions, agricultural policy and many other aspects specific to each nation.

Countries such as Romania, Greece and Cyprus are dominated by small farms, reflecting a greater reliance on subsistence agriculture and often lower economic efficiency [1].

In contrast, countries such as France, Luxembourg and Denmark have a significant share of large farms, showing a more industrialized agriculture with high economic

efficiency due to economies of scale and advanced technologies.

Countries such as Germany have a diverse agricultural structure, with a balanced distribution of farms across different sizes, possibly reflecting greater adaptability to market demands and changes within the agricultural sector.

In any case, the significant variations in the agricultural structure between the countries of the European Union underline the need for agricultural policies at EU level that take these differences into account and provide support adapted to the specific needs of each country.

In addition, these data indicate the need to continue and intensify efforts to modernize and improve efficiency in the agricultural sector in many regions of the European

Union, especially in countries with a high share of small farms.

Transforming these farms into more productive and sustainable holdings can have a significant impact on economic development, food security and environmental protection at European level.

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