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## ANALYSIS OF THE TYPOLOGY OF AGRICULTURAL HOLDINGS

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### ABSTRACT

The agricultural sector is of particular importance for the national economy in the conditions of real membership of the country in the European Union. The liberalization of world trade, the association of Bulgaria with European structures and the restoration of some traditional market positions pose new problems and opportunities for the agricultural sector. The **aim** of the study is to analyze the typology of agricultural holdings. The **objects** of study are agricultural holdings in the countries of the European Union. The latest published agricultural holding counting on Eurostat is included in the survey. The main source of agricultural statistics are the farm structure surveys that are made periodically. The **significance** of the study is to provide a realistic picture of structural conditions in Bulgaria's agriculture, which helps to analyze results which can also be compared across the EU. These conclusions are needed not only for examination the reasons of structural changes in this important economic sector, but also for future prognosis. The **methods** used in the survey are comparing analyze, method of statistics grouping, experts valuation and etc.

**Key words:** typology, types of agricultural holdings, structure, agro statistics, Commission Implementing Regulation EU 2015/220

### INTRODUCTION

The agricultural sector has suffered severely from the consequences of the transition, related to the change of land relations, sectorial economic restructuring and the implemented agricultural policy. (1) The role of agriculture is determined both by its place in the national economy and by its importance in general EU policies and legislation. The economic unification of European countries in 1957 was based on three main sectors - energy, heavy industry and agriculture. In this respect, the full integration of

the agricultural sector has been a goal set since the establishment of the European Community.

The successful development of this sector depends on its ability to adapt to the conditions of the European market, which is largely determined by the information support of its management. The data from the farm structure survey and the structural and area data for workable land, vineyards, horticultural holdings, field vegetable farms and commercial orchards provide one of the main bases for determining the production of vegetable products (field crops, fruits, vegetables and wine). For the economy and politics, data are also essential for agricultural policy decisions at national and international level.

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**DEFINITION OF BASIC CONCEPTS**

Typology means the scientific classification of objects and phenomena by types. (2)

An agricultural holding is a complex unity of technological and organizational-economic relations and relations, which determine its internal mechanism of functioning as an independent economic unit. (3)

The type of agriculture and the economic size should be determined on the basis of an economic criterion. For this purpose, it is appropriate to use standard production, which should be established by product and in accordance with the list of characteristics of the farm structure surveys. Given the growing importance (in terms of income) of profitable activities directly related to the holding, other than agricultural activities, a classification variable reflecting the importance of such activities directly related to the holding should be included in the Union typology. (10)

In order to analyze the typology of a group of farms, they must be classified according to various factors.

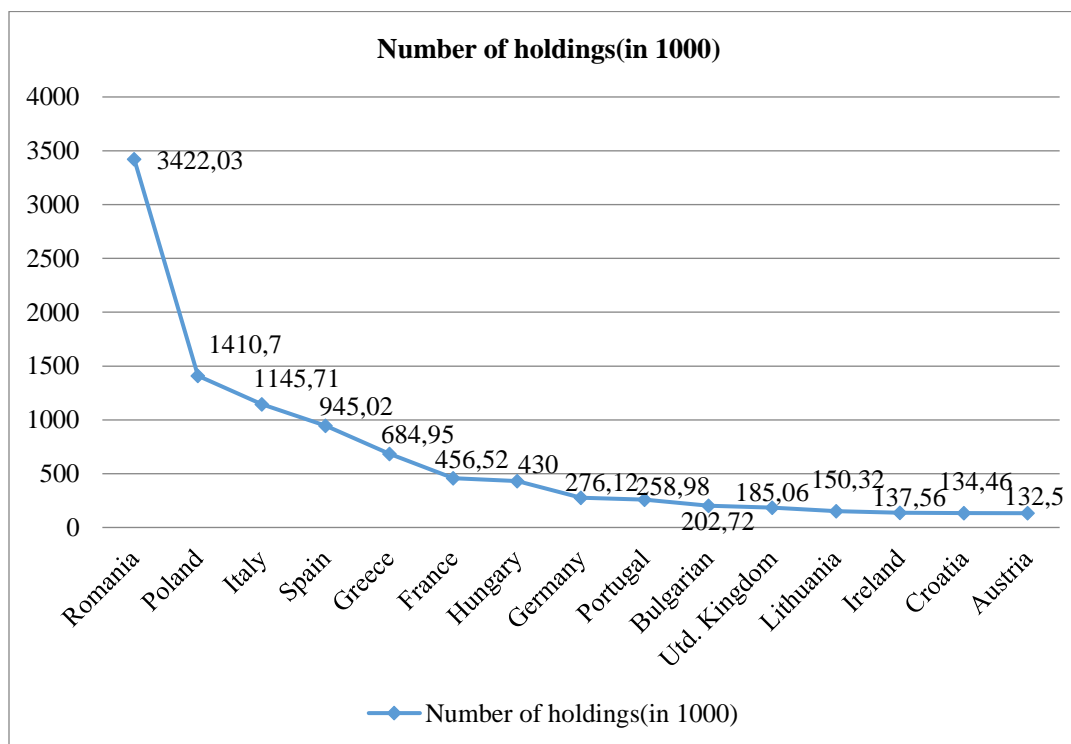
They can be divided into groups according to:  
 - The legal entity - individuals, companies, sole traders, cooperatives, associations and others;

**THE AIMS OF THE STUDY**

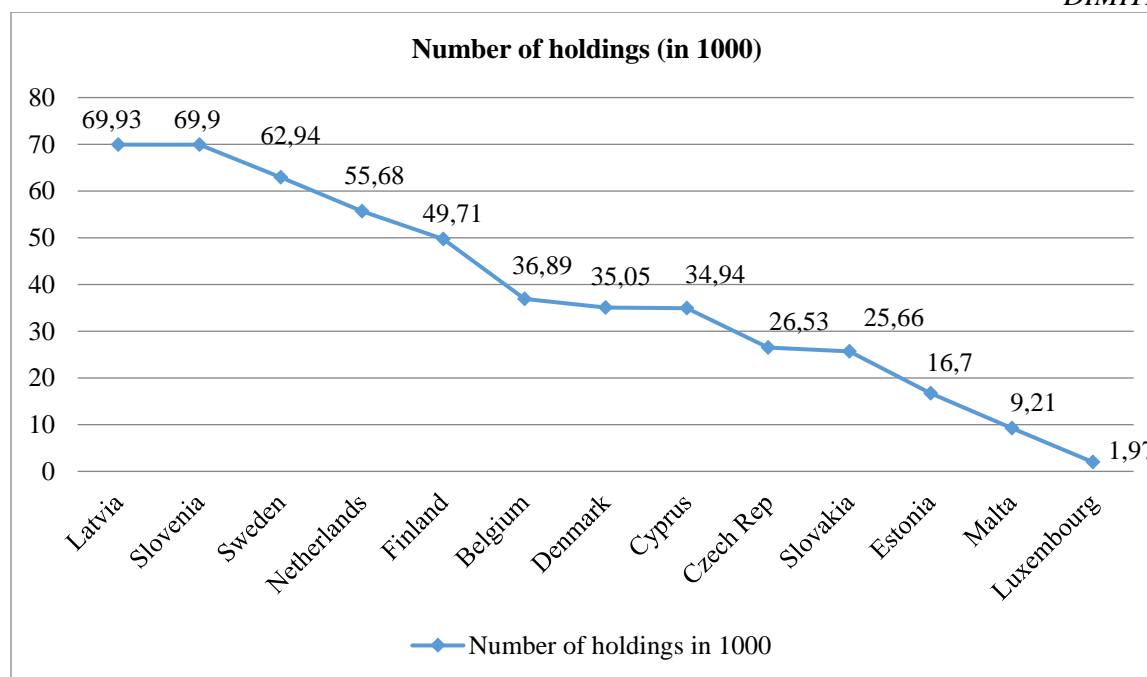
- To study the division of agricultural holdings by types, according to various factors;
- To analyze the typology of farms, according to the division by factors.
- To determine the position of agricultural holdings in Bulgaria with those in the European Union and to make a comparison.
- Draw conclusions on the typology of agricultural holdings in the EU

**SURVEY METHODS, MONITORING AND ANALYSIS OF THE TYPES OF AGRICULTURAL HOLDINGS**

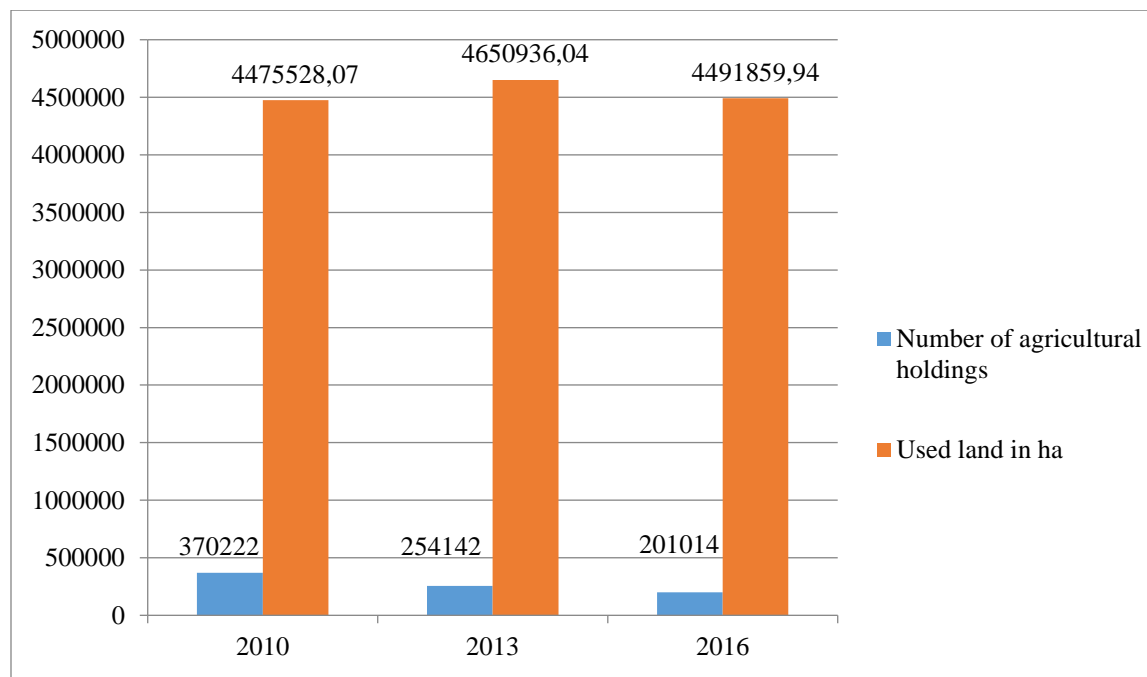
There are a total of 10 468 000 agricultural holdings in the European Union (6) The largest number of holdings compared to other countries is in Romania, almost 1/3 of the total number in the whole European Union. Bulgaria ranks tenth after Romania, Poland, Italy, Spain, Greece, France, Hungary, Germany and Portugal.



**Figure 1.** Number of agricultural holdings in the countries of the European Union, according to Eurostat data from the last census in 2016.



**Figure 2.** Number of agricultural holdings in the countries of the European Union, according to Eurostat data from the last census in 2016.



**Figure 3.** Number of agricultural holdings and arable land in ha in Bulgaria according to MAF data. (5)

During the last 3 countings in Bulgaria there is a decrease in the number of agricultural holdings by about 170,000, which is over 45.92% less than in 2013. On the other hand, the arable land is increasing. This means that the average size of

farms is increasing. If in 2013, one farm cultivated an average of 12.08 ha, then in 2016. the value is already 22.35 ha, which is almost double the increase.

Farms can be classified according to the following typology:

- According to the legal entity - they can be natural persons, legal entities or sole traders. An individual is any person who, from the moment of his birth, acquires the ability to be a holder of rights and obligations. At the age of 18, individuals become adults and fully capable of acquiring rights and obligations through their actions.(7) A legal entity in legal aspect in the Bulgarian legislation is defined only in the Law

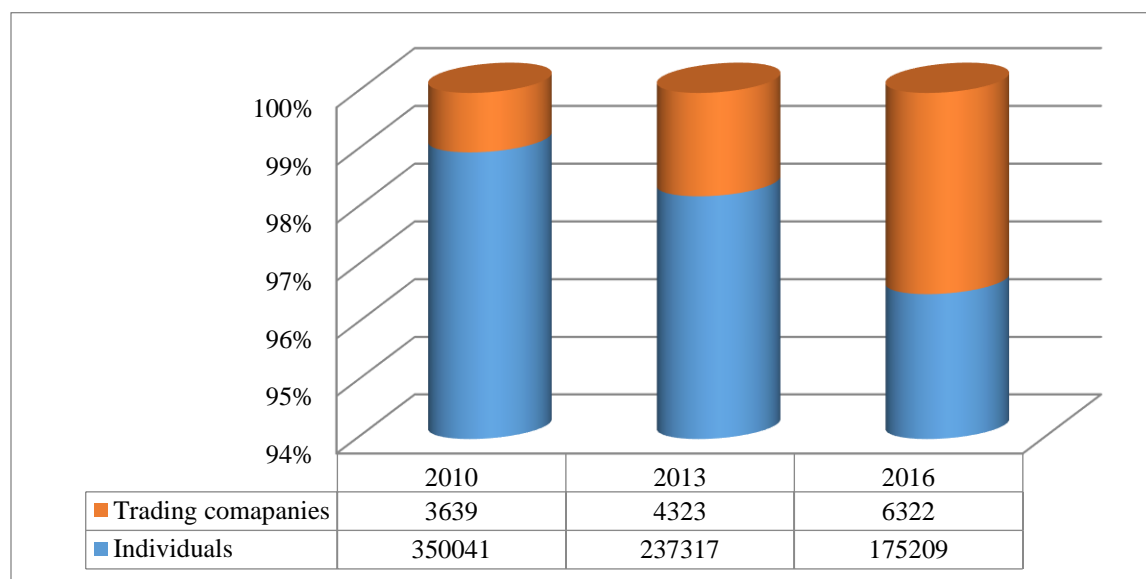
on Persons and the Family. (8) Legal entities are holders of rights and obligations. They acquire rights and obligations through their bodies. Sole proprietors are a hybrid form between an individual and a legal entity, bearing the marks of both legal forms.(9) Each of these persons can be registered as a farmer, and at the same time has an obligation to be duly registered in the BULSTAT Register (for individuals) and the Commercial Register (for legal entities).

**Table 1.** Legal status of holdings in Bulgaria according to latest data from Agricultural accounting information system (5)

Legal status in Bulgaria	Holdings (Number)		
	2010	2013	2016
Individuals	350 041	237 317	175 209
Sole traders	2 134	1 871	1 892
Cooperations	941	811	767
Trading Companies	3 639	4 323	6 322
<b>Total</b>	<b>357 074</b>	<b>244 594</b>	<b>184 448</b>

It is clear from the table that there are serious changes in the number of natural persons

agricultural producers and registered commercial companies agricultural producers.



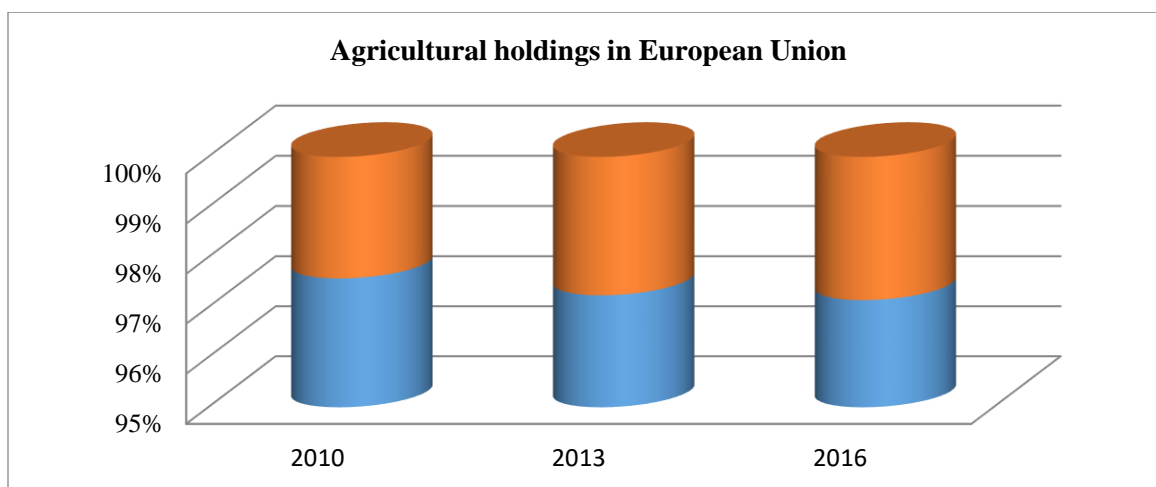
**Figure 4.** Comparison between individuals and companies agricultural holdings in Bulgaria. (5)

As can be seen from the chart, in 2010. The number of natural farmers in Bulgaria was much higher than for legal entities. In 2016 the predominance of preferences in the legal form of

government is already observed. The number of legal entities increased by 42.44% according to the census in 2016, compared to 2010, while the number of individuals decreased by 49.9%.

**Table 2.** Legal status of agricultural holdings in European Union according to latest data from Eurostat (6)

Legal status in EU	2010	2013	2016
Individuals	12 029 970	10 508 330	10 078 630
Trading Companies	298 610	298 250	296 300

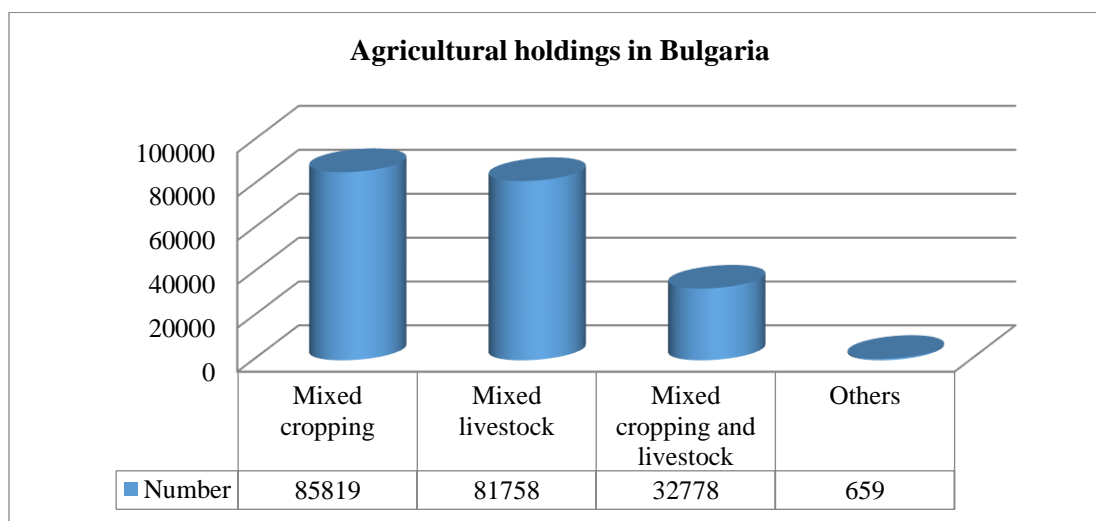


**Figure 5.** Comparison between individuals and companies agricultural holdings in EU. (6)

The ratio of the preferred form of government in the European Union has remained relatively constant during the last three census periods, compared to the data for Bulgaria. The holdings of natural persons decreased by 16.22%, but the trade companies kept their number. There is no such sharp increase in the preference for a form of government as in Bulgaria.

-According to the type of production - plant breeders, stockbreeders and sub-species - annual crops, perennial crops, beekeepers, cattle and small cattle.

For the purposes of the current study, the division according to the activity of agricultural producers is made in the following main directions: Mixed cropping, Mixed livestock, Mixed cropping and livestock and Others.



**Figure 6.** Comparison between agricultural holdings in Bulgaria by type of production. (5)

In Bulgaria there is a relatively equal ratio of plant breeders and livestock breeders. Plant growers make up 42.69% of the total number of

agricultural producers, and livestock breeders make up 40.47%.

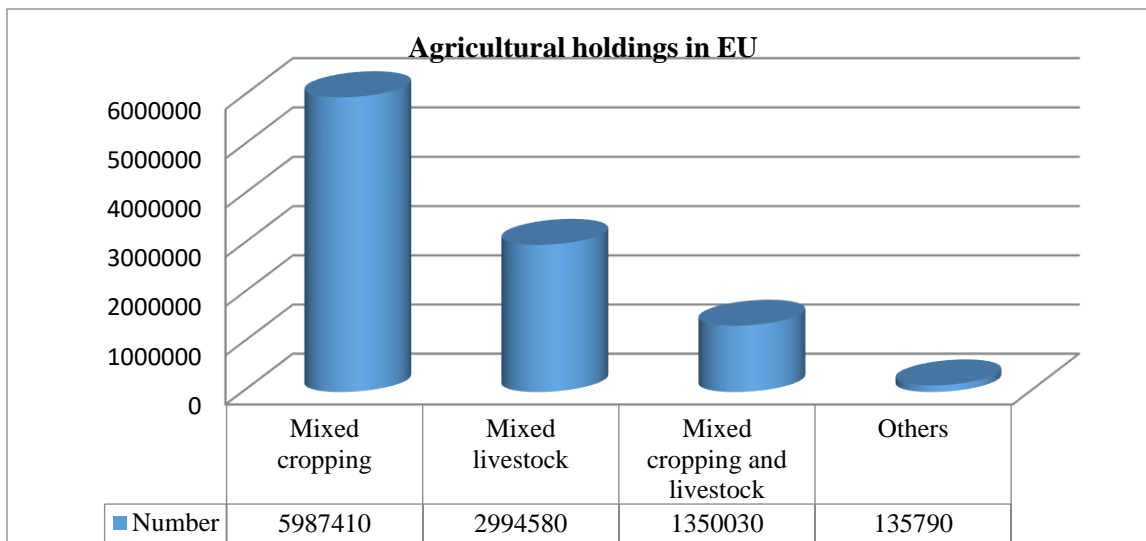


Figure 7. Comparison between agricultural holdings in EU by type of production. (6)

There is a preference for crop production in the European Union. Over 57% of the total number of farmers in the European Union choose to be plant breeders and only 29% consider raising animals. Producers who own mixed farms (crop and livestock) in Bulgaria are 16.3% of the total, while within the European Union they are 13%, which can also be said that the preferences are similar.

the average monetary value of agricultural production at producer price. The standard output does not include direct payments, value added tax and other taxes. The standard output is calculated on the basis of average prices for agricultural / animal production – on an annual basis or for a period. According to the metrics from the programming period 2014-2020, farms with a size of up to 2000 EUR SO are considered small, from 2-8000 EUR SO are medium, and those with over 8000 EUR for large.

-According to the size – small, medium, large. Farms are categorized, in one of the three groups, according to their standard output(SO). It reflects

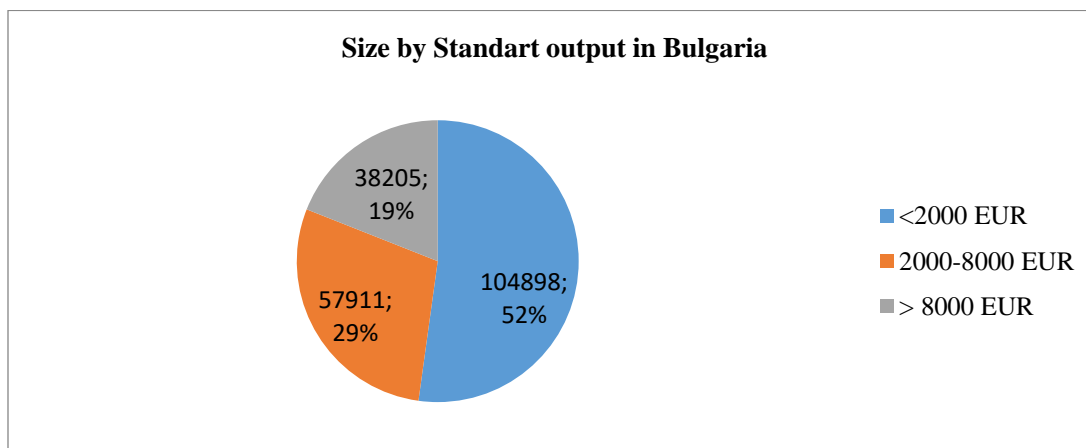


Figure 8. Comparison between size of agricultural holdings in Bulgaria by standard output in EUR. (5)

The standard gross margin, abbreviated as SGM, is a measure of the production or the business size of an agricultural holding. It is based on the separate activities or 'enterprises' of a farm and their relative contribution to overall revenue. For each separate activity (for instance wheat, dairy cows or a vineyard), a SGM is estimated, based on the area (for crop output) or the number of heads (for animal

output) and a standardized SGM coefficient for each type of crop and livestock, calculated separately for different geographical areas to allow for differences in profit. The sum of all these margins per hectare of crop and per head of livestock in a farm is a measure of its overall economic size, expressed in European size units or ESU - 1 ESU is a 1200 euro SGM.(6)

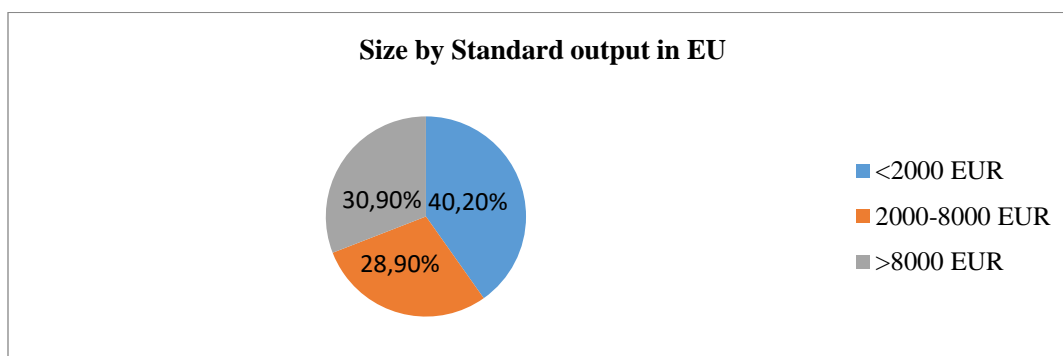


Figure 9. Comparison between size of agricultural holdings in EU by standard output in EUR. (6)

In Bulgaria, 52% of farms are small, according to their standard production volume below 2000 EUR standard output. In the European Union the percentage is 42%, but although it is lower compared to Bulgaria, it is also the most common farm size is below 2000 EUR standard output. The number of medium-sized farms in both Bulgaria and the EU is approximately 29% of the total number of farms. Large farms in Bulgaria are only 19%, while in the European Union they are 30.9%.

It can be concluded that in Bulgaria there are 12% more farms with a standard output of less than EUR 2,000 compared to the average data for the European Union and there are 12% fewer large farms with a SO of over EUR 8,000.

-According to the type of production - Organic - these farmers grow their production, fully in accordance with the requirements of Regulation (EU) 2018/848 of the European parliament and of the council of 30 May 2018, as this is controlled and certified by an externally accredited company.

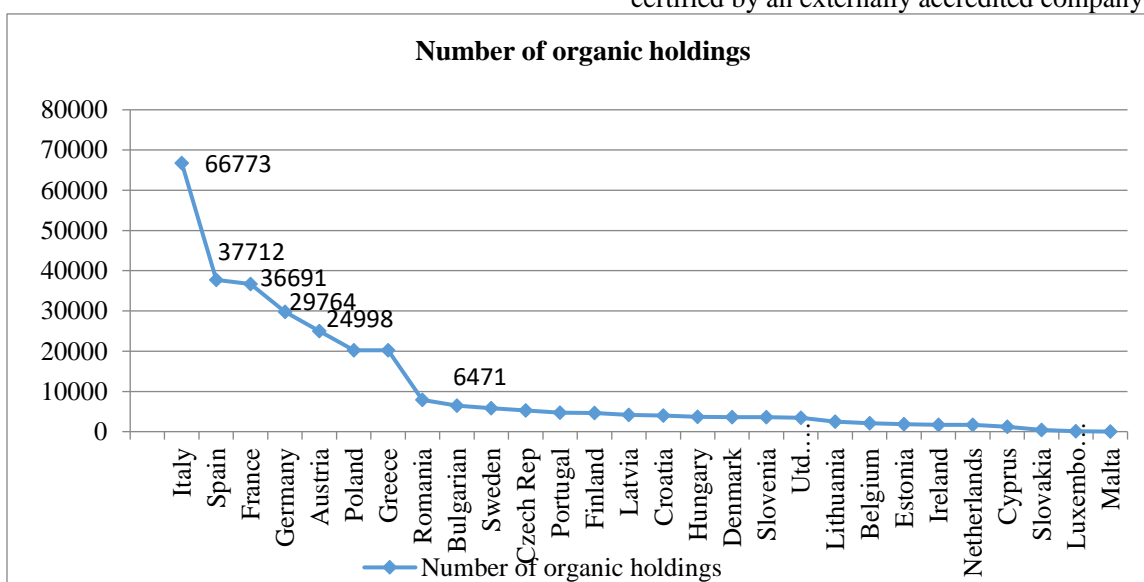
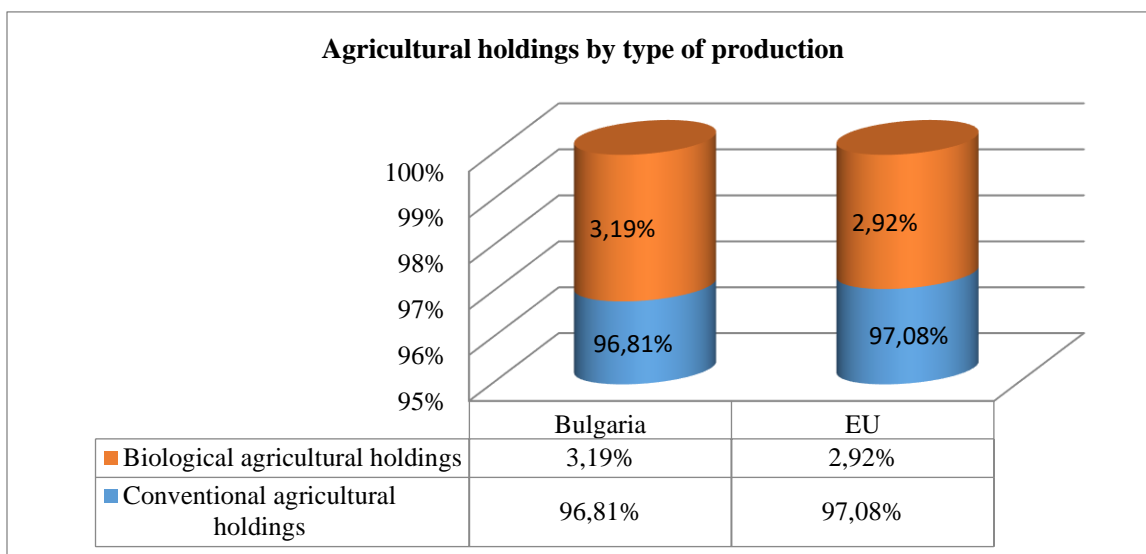


Figure 10. Comparison between number of agricultural holdings in EU (5)

Italy is the country in the European Union with the largest number of organic farms, namely 66773. This is 21.86% of all organic farms in the EU. In Italy, every fifth farmer decides to grow their production in accordance with the requirements of European Regulation (EU) 2018/848. The other countries with a larger

number of organic farms are Spain, France, Germany and Austria. Bulgaria ranks ninth with its 6471 organic farms.

Conventionally - these farmers grow their production in the traditional way, using fertilizers and preparations that are not organically certified.



**Figure 11.** Comparison between number of biological and conventional agricultural holdings in percentage between EU and Bulgaria, Eurostat data for 2017 (5)

### SURVEY RESULTS AND MAIN CONCLUSIONS

The preferences for organic production in Bulgaria by farmers move in parallel with the average levels for the European Union. A total of 3.19% of farms in Bulgaria are organic and 96.81% are conventionally produced. According to average data for the European Union, the levels are similar, but still slightly lower - 2.92% of farms are organic and 97.08% are conventional.

The European typology of holdings is essentially a classification based on the technical and economic specialization and the economic size of the holdings. This classification allows the formation of relatively homogeneous groups of farms, as the economic size and technical and economic orientation are determined on the basis of the gross standard difference. The conducted surveys on the structure and typology of agricultural holdings provided an opportunity to check the applicability of the new characteristics adopted by the EU member states and included in

the questionnaire under national conditions. The classification schemes for the typology of agricultural holdings have been successfully adapted to the peculiarities of Bulgarian agriculture, incl. defining the "threshold" for including farms in the scope of the surveys. The considered statistical observations in agriculture (independent from the institution that conducts them) show the wide range of agricultural statistics in relation to the phenomena and processes taking place in the industry; multi-layered and in-depth analysis of their characteristics; striving to ensure maximum and timely compliance with the latest requirements of European statistics. The establishment of a unified environment and means for the implementation of all information activities in agriculture objectively impose the need to create a specialized information system for its condition. The mechanisms of the Common Agricultural Policy and the activities of the EU Structural Policy are based on analyzes and



calculations, the data for which must be collected in a uniform manner and methodology adopted by Eurostat. The analysis of the economic efficiency of agricultural holdings was conducted for the period 2007-2016.

Based on the analysis, the data from the current study are summarized, some of which are:

- The number of agricultural holdings in Bulgaria decreased by 45.92%, but the arable land increased. The average size of a farm increases by 54.05%.
- The number of legal entities farmers in Bulgaria increased by 42.44% from 2010 to 2016, and the number of individuals decreased by 49.9%. In the European Union, the data are relatively constant compared to Bulgaria. There is a decrease in natural persons farmers by 16.22%.
- In Bulgaria there is a relatively equal ratio of crop and livestock breeders, respectively 42.69% and 40.47% of the total number of farms. In the European Union, over 57% of the total number of farmers choose to be plant breeders and only 29% of the total number raise animals.
- Producers who own mixed farms (plant and livestock) in Bulgaria for 16.33% of the total, and the average number of mixed farms in the EU are 13% of all, which means that the preferences are similar.
- In Bulgaria and in the European Union, small farms with SO under 2000 EUR prevail, respectively 52% and 42% of the total number.
- In Bulgaria there is a smaller number of large farms (over 8000 EUR SO) compared to the EU average, respectively 19% and 30.9%.
- In Bulgaria, farms with a standard production volume of less than EUR 2,000 are 12% more than the average data for the European Union and

there are 12% fewer large farms with a standard production volume of over EUR 8,000.

- 21.86% of all organic farms in the EU are in Italy, which ranks it first of all EU countries. Bulgaria ranks ninth with its 6471 organic farms.
- The preferences for organic production in Bulgaria by farmers move in parallel with the average levels for the European Union, respectively 3.19% of the total number of farms and 2.92%.

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