

## **Bulgarian agriculture in the focus of representative statistical surveys**

**Plamena Yovchevska**

*Agricultural Academy, Institute of Agricultural Economics, 1113 Sofia, Bulgaria*

*E-mail: yovchevska@abv.bg*

### **Abstract**

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The aim of the article is to highlight certain trends in Bulgarian agriculture. The article is based on representative empirical information from the Farm Accountancy Data Network (FADN) and Farm structure survey (FSS). Changes in land use are registered with a significant impact on the development of land relations in our country. The results reveal processes of different nature and express the effect of the dominance of the Community agricultural policy on the economic conjuncture for the development of agriculture in our country. The dichotomy in the used agricultural area is an expression of increased competitiveness, which is inherent mainly in the production of extensive crops, with the presence of significant features for monoculture agriculture. At the same time, systemic problems in the intensive crops stand out, for the production of which Bulgaria possesses monopoly natural-climatic conditions. These results highlight the role of land relations and reveal/bring out potential opportunities for increasing the importance of agriculture in improving public relations and the socio-economic environment not only in the sector but also in the country as a whole. The Covid-19 challenge creates the preconditions for re-evaluating some existing stereotypes. The results of surveys over the last ten years reveal processes of consolidation of the utilized agricultural area and its concentration in a small number of large agricultural holdings. Extensive crop production is increasing. Intensive production, vegetables, fruit and livestock fall into the group of “vulnerable sectors”. The number of small actors is decreasing; the processes of medium-sized ones are unstable. This creates difficulties in establishing sustainable family farms and is a potential risk of depopulation in some rural areas in Bulgaria. The registered processes are in dissonance with the goal setting of the Common agricultural policy (CAP). FADN 2020 reaffirms this trend, as the utilized agricultural area in Bulgarian agriculture continues to grow and monoculture production remains sustainable. The crisis with COVID-19 has revealed a number of problems in the supply of agricultural goods, which is an occasion to rethink the role of national policy to provide consumers with products of local origin and frames the need for cognition in the analysis of complex contemporary socio-economic processes.

*Keywords:* Bulgarian agriculture; FADN; FSS; land relationships; COVID-19

### **Introduction**

Agriculture is an economic activity of multifunctional importance for the national economy of each individual country. In Bulgaria, the conditions for agricultural production are favored by exceptional natural and climatic conditions, rich soils, conditions that ensure the production of 145 cultivated plant species under the open sky. These

prerequisites have created rich socio-cultural traditions and skills, which Bulgarian gardeners have spread not only in Europe but also around the world. Bulgaria is rightly famous as an agrarian country. Cultivated agricultural products have a unique organoleptic taste, balanced vitamin and mineral composition (Krishkova et al. 2020; Atanasov, 2021), which makes them easily digestible and valuable healthy products for any diet.

An important fact that must be taken into account in the analysis is that in the last three decades the economic situation in which Bulgarian agriculture operates has changed significantly twice (Minev, 2014). The first change occurred when the social model of society changed in the late 1990s. Bulgaria carried out a cardinal agrarian reform, the emanation of which was the restitution of the land to the former owners “in real boundaries” (Bishop et al., 1994; Popov, 2011). The new institutional environment is accompanied by the emergence of a high percentage of uncultivated land, which reaches 1/3 of the utilized agricultural area in the country (UAA). The second change in the economic situation is a result of the country’s full membership in the EU-27 in 2007 and the implementation of the *acquis communautaire* and common agricultural policy.

As a member of the common European economic space, Bulgaria not only has to comply with imperative rules and norms. Moreover, the economic environment in the country is subject to monitoring/evaluation, conducted according to a common methodology applied to all EU Member States. In the field of agriculture, periodic representative observations are carried out, which are largely related to the philosophy of the Common agricultural policy and the objectives of support for actors / economic operators engaged in agriculture.

The Official Journal of the European Union, Article 39 (ex Article 33 TEC), regulates:<sup>1</sup>

1. The objectives of the common agricultural policy shall be:

(a)	to increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimum utilisation of the factors of production, in particular labour;
(b)	thus to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture;
(c)	to stabilise markets;
(d)	to assure the availability of supplies;
(e)	to ensure that supplies reach consumers at reasonable prices.

2. In working out the common agricultural policy and the special methods for its application, account shall be taken of:

(a)	the particular nature of agricultural activity, which results from the social structure of agriculture and from structural and natural disparities between the various agricultural regions;
(b)	the need to effect the appropriate adjustments by degrees;
(c)	the fact that in the Member States agriculture constitutes a sector closely linked with the economy as a whole.

<sup>1</sup> [https://eur-lex.europa.eu/eli/treaty/tfeu\\_2016/art\\_39/oj](https://eur-lex.europa.eu/eli/treaty/tfeu_2016/art_39/oj)

In the present study, an attempt is made, through the results of representative statistical surveys, to highlight/frame some trends in Bulgarian agriculture and to relate them to the general philosophy of the CAP.

## Methodology framework

The study is based on representative empirical information from the Farm Accountancy Data Network (FADN)<sup>2</sup> and Farm structure survey (FSS)<sup>3</sup>. The farm accountancy data network (FADN) and Farm structure survey (FSS) monitors business activities and farms’ income. FADN is the only source of microeconomic data based on harmonised book-keeping principles. FADN is important informative source for understanding the impact of the measures taken under the common agricultural policy (CAP).

## Results and Discussion

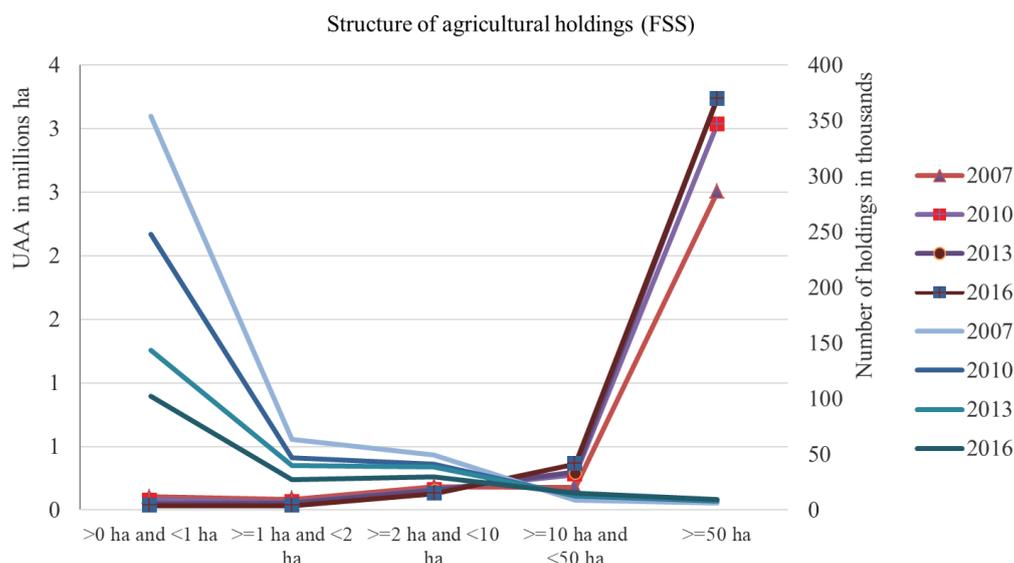
The conduct of representative empirical research is regulated by a binding piece of legislation, which is applied in its entirety by all EU countries. This is a regulation of the Council of the EU. Member States adopt their own laws implementing the Regulation. The central role in the Regulation is given to the agricultural census, which is the backbone of the system of agricultural research introduced by law. The spirit and philosophy of the legal provisions in the Regulation are based on the need to continue the European Research Program on Farm Structure, dating from 1966, by examining trends at EU level and creating the statistical knowledge base needed for development, implementation, monitoring, evaluation and review of related EU and CAP policies in particular, including rural development measures, EU environmental policies, adaptation to and mitigation of climate change, land use change and some of the sustainable development goals.

The information collected is in response to the obligations to society, which must be objectively and impartially informed about the state and trends in the development of agriculture in the EU Member States, incl. in Bulgaria. We back up the view that representative data<sup>4</sup> is the wealth that

<sup>2</sup> [https://ec.europa.eu/info/food-farming-fisheries/farming/facts-and-figures/farms-farming-and-innovation/structures-and-economics/economics/fadn\\_en](https://ec.europa.eu/info/food-farming-fisheries/farming/facts-and-figures/farms-farming-and-innovation/structures-and-economics/economics/fadn_en)

<sup>3</sup> <https://ec.europa.eu/eurostat/web/microdata/farm-structure-survey>

<sup>4</sup> The texts of Regulation (EU) 2018/1091 of the European Parliament and of the Council on integrated agricultural statistics require that representative information be provided for 98% of the utilized agricultural area and 98% of the livestock units in each Member State.



**Fig. 1. Distribution of holdings by size UAA**

Source: Ministry of Agriculture, Food and Forestry, Department Agrostatics, DG ARP, FSS

generations of data users – politicians, researchers, business representatives, citizens – will reach for the purposes of their projects, comparisons, analyzes, models and strategies (Nikolova, 2020).

With the help of the graphic method final data from conducted statistical observations in 2007, 2010, 2013 and 2016 are illustrated/presented (Figure 1). The observation period covers the first 10 years of Bulgaria's full membership in the EU-27 and reflects trends that mark the development of our agriculture in the implementation of the Community agricultural policy.

The analysis of the presented information reveals a process of pronounced and increasing dichotomy<sup>5</sup> between the used agricultural area and the structure of the economic entities operating in the Bulgarian agriculture. Economic behavior aimed at extracting rent in the absorption of European funds is observed (Minev, 2014). This may explain the manifestation of the dichotomy and its growing into inequality (Stiglitz, 2012; Piketty, 2014; Mavrov, 2016). As early as 1993, in Lecture to the memory of Alfred Nobel, Douglass North shared that the institutional-cognitive approach could explain uneven economic development.<sup>6</sup> Probably, the cognitive principle should be strengthened in the analysis of modern processes of inequality.

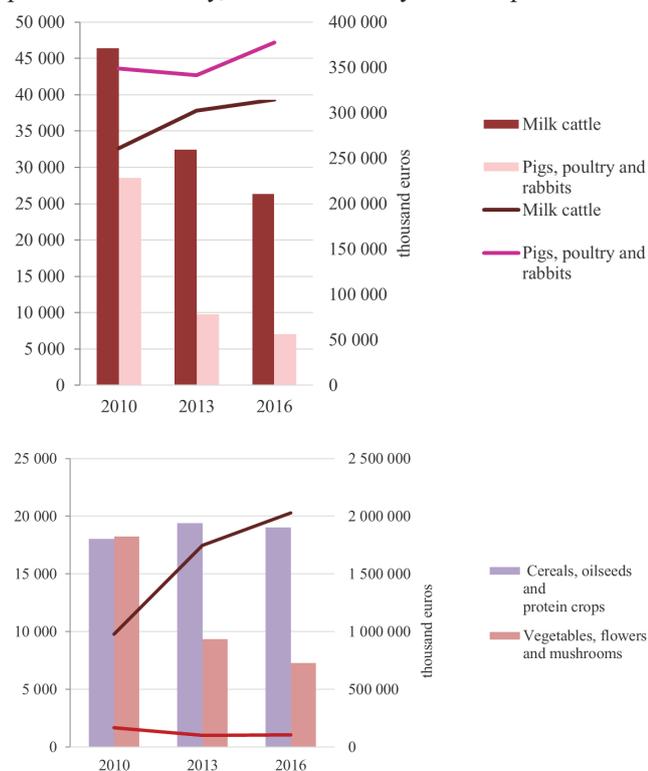
<sup>5</sup> From Greek: διχοτομία – “splitting in two”

<sup>6</sup> Nobel Lectures in Economic Sciences, Vol 3 (1991-1995): The Sveriges Riksbank (Bank of Sweden) World Scientific Publishing Company, 1997 by Torsten Persson (Editor) 280 pages, ISBN: 978-9810230593. <https://www.amazon.com/Nobel-Lectures-Economic-Sciences-1991-1995/dp/9810230591>

The implementation of the common agricultural policy leads to an increase in the size of UAA in large farms. Subsidizing production per unit area, as a way to support actors in the sector, is an easy to administer process. This was the main argument to make the choice in 2007. With the relatively modest national support for agricultural production and expanded opportunities of foreign trade, Bulgarian agriculture is increasingly acquiring a monocultural appearance. Large farms industrialize production processes, cultivating crops with fused surface and modernizing technological solutions with the help of support from European funds. The increased modernization, the higher competitiveness, the achieved volumes of production with high quality indicators are positive effects for the improvement of the economic situation in the Bulgarian agriculture and increase of the value created by the sector in the national economy. At the same time, the number of small farms is declining, a process that can be interpreted as the normalization of the economic environment after the numerous problems in the transformation of the social model three decades ago and the restitution of the land to the former owners “in real boundaries “. Given the specifics of Bulgarian agriculture and the monopolistic quality of natural resources for growing crops, this phenomenon of dichotomy in the sector is the reason for a number of issues burdened with socio-economic content. This process also hinders crop diversification (Aleksandrova & Kabadzhova 2020).

The postulate that business follows money is validated in a number of textbook programs. It turns out that the initial

reading of the results of the functioning of the economic system in Bulgarian agriculture confirms this rule. Convergence has been achieved in the implementation of the SAR (Ivanov 2020). At the same time, if the analysis is located in the coordinate system of natural resources – economic results, a number of discrepancies are revealed. Despite the rich natural and climatic conditions for the production of fruits and vegetables, after the application of the CAP, unfavorable tendencies are registered concerning the intensive crops in Bulgarian agriculture (Figure 2). The growth of extensive crops is significant. The trend of increasing the number of farms growing cereals, oilseeds and protein crops is sustainable. This trend has been registered right after the transformation (Meekhof et al., 1994). The return on investment in the cultivation of these crops is accelerating (Mikova, 2020). Despite the registered slight decrease in the number of farms, given the updated technologies and innovative technical and often digitized solutions in the cultivation and harvesting of production in intensive crops, the valuable economic results of extensive crops are increasing. This, if we return to the postulate of money, ensures stability and keeps those em-



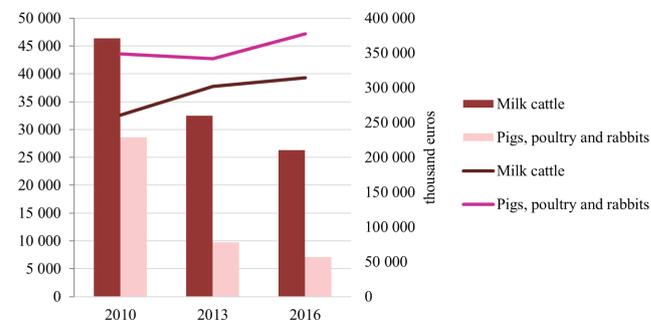
**Fig. 2. Holdings specialized in cereals, oilseeds, protein crops, vegetables, flowers and mushrooms**

Source: Ministry of Agriculture, Food and Forestry, Department Agrostatistics, DG ARP, FSS

ployed in the grain sector. At the same time, the decline in intensive production is significant (Figure 2). During the first three years of the observation period, vegetable farms were halved. Every second farm disappears from the legal space. This coincides with the period when the nomenclature “vulnerable sectors” appeared in Bulgarian agriculture (Stoeva & Dirimanova, 2020). Production in the vegetable, fruit and livestock sectors fell into the group of vulnerable. A kind of paradox for which no ready-made solutions are found in economic theory (Kuhn, 1962; North, 2000).

The holistic study of matter, in which living and non-living conditions are intertwined, of biological, ecological, economic and social laws, is a complex process (Vlaev, 2020; Stanimirova et al., 2021). It seems further complicated by the agenda of political decisions and institutional actions (Georgiev, 2021). Following the introduction of support to vulnerable sectors, there has been a slowdown in the initial collapse in the number of agricultural holdings in the Vegetables sector. The return on investment is still unsatisfactory. The analysis of the data from Figure 2 provokes a very serious expert approach in which opportunities can be found for rediscovering the givens of the natural factor and revealing synergy opportunities for improving the state of Bulgarian agriculture in economic, social and socio-cultural terms.

After the application of the CAP in Bulgarian agriculture, the livestock sub-sector also falls among the so-called vulnerable sectors (Figure 3). Data from representative statistical surveys conducted after 2010 show a significant decline in the number of agricultural holdings (Stoychev, 2014). The decline in the economic units raising pigs and poultry is particularly noticeable. At the same time, the return on investment is growing steadily, which can be explained by the modernization of production and the consolidation of farms.



**Fig. 3. Holdings specialized in Milk cattle, pigs, poultry and rabbits**

Source: Ministry of Agriculture, Food and Forestry, Department Agrostatistics, DG ARP, FSS

The registered trend has a general positive sign in terms of economic results in the operation of the livestock sub-sector. If we transfer the analysis in socio-economic terms, this high concentration of pig and poultry production in large farms, with signs of industrial production, carries a potential risk of depriving certain regions of livelihoods. This in turn can provoke/lead to unfavourable demographic trends. The existence of poultry and pig farms, which are the main consumers of grain, provides added value, creates opportunities for the processing of animal products, which provides jobs and prevents depopulation.

Preliminary results from the 2020 census (CENSUS, 2020) indicate that the dichotomy process is intensifying.<sup>7</sup> Published preliminary data report a serious decrease in the number of UAA farms below 10 ha compared to 2010. In case of the smallest, those up to 1 ha, only one-fifth remains. In 2020, farms with UAA up to 2 ha are only one third of those in 2010, and farms with UAA up to 10 ha decrease by 60%. The opposite trend is in the case of economic units managing large-scale farms. Their share increases by 28% in 2020 compared to the 2010 census. This process of UAA consolidation leads to the fact that 9% of the agricultural farms in Bulgaria (with 50 and more ha) manage 85% of the land with agricultural purpose in our country. This stabilizes the process of expanding monopoly production, stimulates the cultivation of extensive crops and limits the production of value-added agricultural products. The nomenclature of cultivated crops decreases sharply and the country has to import fruits, vegetables and livestock products, nomenclatures for the production of which Bulgaria has unique natural and climatic conditions. The above-mentioned processes in the last census of agricultural structures showed up a number of socio-economic problems, some of which were highlighted from the very beginning of the pandemic situation in 2019.

The situation with Covid-19 and the difficulties in food supplies put on the agenda the topic of providing the population with a healthy, vitamin and varied diet. This could be done by local and regional producers and create security in food chains. These opportunities are limited if production is concentrated in large agricultural units specializing in the breeding of small numbers of crops or animal species.

## Conclusion

The presented results of representative statistical surveys are a kind of focus that allows to trace the develop-

ment of Bulgarian agriculture and to objectify certain conclusions. With the concentration of land in a small number of agricultural holdings, Bulgaria is subject to the resolution adopted by the EP “Status of the concentration of agricultural land in the EU: how to facilitate access to land for farmers”.<sup>8</sup> EP regulation is a political assessment of access to land. At the same time, this regulation aims at both improving the economic environment for economic activity and improving the socio-economic situation in agriculture and in the rural areas of the community. The thematic profile of the resolution has a strong significance and attitude to the improvement of land relations in Bulgaria. Member States are called upon to strengthen the EU-wide model of family farms, using EU subsidies. “Over BGN 16 billion have entered Bulgarian agriculture since the accession of our country to the European Union through the provided financial instruments”.<sup>9</sup> After the analysis of the state of Bulgarian agriculture, we can conclude that there is a need for a national policy in order to overcome certain disproportions and manifestations of imbalances in the sector, so as not to stray too far from the goal of Community agricultural policy.

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<sup>8</sup> EUROPEAN PARLIAMENT EP Resolution P8\_TA-PROV (2017) 0197

<http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2017-0197+0+DOC+XML+V0//BG>

<sup>9</sup> <https://www.mzh.government.bg/bg/press-center/novini/ministr-bozukov-she-poiskam-da-bde-otpusnato-zrno/>

<sup>7</sup> MAF, Agrostistics. Bulletin N 390. 2021 [https://www.mzh.government.bg/media/filer\\_public/2021/05/05/census2020\\_publicationpreliminarydata.pdf](https://www.mzh.government.bg/media/filer_public/2021/05/05/census2020_publicationpreliminarydata.pdf)

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