

ORGANIZATIONAL STRUCTURAL CHANGES IN AGRICULTURE IN POLAND AND BULGARIA: A COMPARATIVE ANALYSIS

DOITCHINOVA, JULIA¹
WRZOCZALSKA, AGNIESZKA²
KARWAT-WOŹNIAK, BOŻENA³
MITEVA, ALBENA⁴

Abstract

The orientation and dynamics of organizational restructuring in the countries of Central and Eastern Europe have been the subject of analysis over the past decades. Both the reasons for these changes and their speed and consequences for the development of the sector and of rural areas are being assessed. The aim of this report is to analyze, evaluate, and compare the trends in the development of production structures in Poland and Bulgaria under the conditions of their membership in the European Union.

The choice of these two countries is based on their differences in: the structure and nature of agricultural holdings at the beginning of the 1990s; the scope of land and organizational structural reforms carried out in the pre-accession period; and their impact on the development of agriculture and rural areas under the Common Agricultural Policy. The study uses Eurostat data for the period 2005–2020, as well as data from the agricultural statistics of the two countries on the number of farms, utilized agricultural area, economic size, and others. The comparative analysis and the conclusions drawn reveal significant differences in the period prior to the accession of the two countries to the European Union, related to the historical development of land use in them and the preservation of private farming in Poland during the period of centrally planned economy.

During the membership period (since 2004 for Poland and since 2007 for Bulgaria), the trends in product and organizational restructuring are unidirectional and similar, but proceed at different speeds. Different outcomes are also observed with respect to the formation of production structures, the structure of farms by number, and the distribution of utilized agricultural land among farms of different sizes. The organizational restructuring of Polish agriculture is characterized by a slower pace of reduction in the number of farms and an increase in the average size of utilized agricultural land. At the same time, the resulting structure of farms by economic size shows a relatively more even distribution of farms across sizes.

Bulgarian agriculture has been restructured significantly faster, both in terms of the number of farms and in terms of the average size and legal status of agricultural holdings. As a result, a strongly dualistic structure has emerged, in which a significant (though declining) number of farms use a

¹ Professor, Doctor of Science, University of National and World Economy, Bulgaria, E-mail: juliadoj@unwe.bg

² Professor, Doctor of Science, Institute of Agricultural and Food Economics - National Research Institute, Warsaw, Poland. E-mail

³ Doctor, Engineer, Institute of Agricultural and Food Economics - National Research Institute, Warsaw, Poland. E-mail

⁴ Professor, Doctor, University of National and World Economy, Bulgaria, E-mail E-mail

small relative share of the utilized agricultural land, while a relatively small number of very large farms cultivate over 80% of the utilized agricultural land.

Keywords: agricultural holdings, structural transformations

JEL: Q13, Q15

Introduction

The processes of transformation in Poland and Bulgaria created opportunities for establishing a qualitatively new socio-economic space in rural areas and agriculture. Their main objective was to modernize the structures of Polish and Bulgarian agriculture and rural regions in order to adapt the agrarian sector to the European model, as well as to ensure decent incomes and living conditions for the rural population. Since the beginning of the 21st century, the fundamental importance of agriculture has been linked to the provision of public goods in terms of environmental protection and the preservation of the values of the natural landscape, as well as its contribution to the vitality of rural areas.

The purpose of this report is to analyze, evaluate, and compare the trends in the development of production structures in Poland and Bulgaria under the conditions of their membership in the European Union.

These issues have also determined the structure of the report: literature review; organizational structural changes in Polish and Bulgarian agriculture; comparison of processes and trends in both countries; conclusions and discussion. In the section on comparative analysis, the research team evaluates the trends of changes, their pace, and results, with emphasis on the similarities and differences in the restructuring of the agrarian sector in the two countries.

Literature Review

The processes of economic development have as their natural outcome the decreasing importance of agriculture in modern economies (Tomczak, 2004; Timmer, 2007). Although the relative share of the agricultural sector in value added declines, this does not automatically lead to a reduction of its impact on the economic and social situation of the country (Tomczak, 2004). This impact depends not only on the size of agricultural production resources, but above all on the ways in which they are used (Grzelak, 2008; Doitchinova et al., 2022), which are most clearly expressed in the characteristics of farms. The de-agrarization of the economy and rural areas is becoming increasingly pronounced in the economies of European countries. At the same time, a number of authors emphasize the continuity of this trend (Dudek and Karwat-Woźniak, 2018). Nevertheless, agriculture continues to shape the socio-economic conditions in Poland and Bulgaria to a relatively large extent. This influence results from a variety of factors, including the large number of farms and the significant role of agriculture in generating income

for farming households (Central Statistical Office, 2022) and in providing employment for the rural population (Frenkel, 2018; Kanchev, Doitchinova, 2005).

The decreasing significance of the agricultural sector in the economy does not lead to its economic marginalization, since structural transformations improve the efficiency of resource use and of agriculture as a sector of the economy (Woś, 1999, 2002). The decline in the number of farms worldwide has been accompanied by an increase in their size (Besser et al., 2017; Park, Deller, 2021). More than 2.2 million farms ceased to exist during the period 2007–2013 (Eurostat). Under the current CAP, structural changes are expected to continue or even accelerate (Schuh et al., 2022).

The holistic structure of agriculture is described by a highly diverse and complex set of indicators related to specific characteristics of the agricultural sector. Most often, however, it is identified with the agrarian structure (Baer-Nawrocka and Poczta, 2020), i.e., the state of agricultural production units (Pietrzak and Walczak, 2014). Agrarian transformations represent an indispensable and fundamental component of the quantitative and qualitative changes in the agricultural sector, and they determine progress in agriculture in the following periods (Baer-Nawrocka and Poczta, 2020). Thus, they play a decisive role in shaping the characteristics of agriculture. The experience of various highly developed countries shows that current agrarian transformations have mainly contributed to improving agricultural productivity. In the long term, this trend allows for the reallocation of resources (mainly labor) from agriculture to sectors of the economy with higher productivity. Increasing capitalization, specialization, and intensification of the sector, however, lead to a number of negative effects on rural areas, the environment, natural resources, and more. All this has triggered public concern and criticism, as it is unlikely that structural trends in agriculture can be reversed (Hebinck, 2018). Some researchers (Nowack et al., 2023) assess the differences between diversification activities depending on their factor intensity in terms of labor and capital. They conclude that engagement in labor-intensive activities is a typical “survival strategy” for small farms, which lack the capacity to develop and expand their land-based agricultural activities and capital-intensive non-agricultural activities. Consequently, labor-intensive diversification leads to a model of agricultural development that differs from agricultural industrialization and thus diverges from the growth paradigm.

The industrialization of agriculture limits the social functions of agriculture (Kallioniemi et al., 2016; Molinero-Gerbeau et al., 2021; Rye, Andrzejewska, 2010), as fewer and fewer inhabitants derive income from it. At the same time, it has shifted the boundaries of agriculture, reinforcing the multifunctionality of farms and rural areas (Cairol et al., 2008; Doitchinova et al., 2018; Knickel et al., 2004). The number of farms decreases along with the reduction in the number of rural inhabitants (Bilewicz, Bukraba-Rylska, 2021; Hebinck, 2018; Tsviatkova, D. and

Wrzochalska, A., 2023). In some regions of Bulgaria, this is one of the reasons for negative demographic processes and depopulation (Doitchinova, Lazarova, 2023). Family farming, based on private ownership of land and other means of agricultural production, is the foundation of Poland's agricultural system (Zegar, 2018). It has been enshrined in the Polish Constitution, which affirms the dominance and permanence of the family form of farming within agriculture. With some interruptions, the family model of farming has been restored and developed in recent decades in Bulgaria.

Methodology

The choice of the two countries Bulgaria and Poland is based on the differences in:

- the structure and nature of agricultural holdings in the early 1990s;
- the scope and methods of implementing land and organizational structural reforms (implemented during the pre-accession period) and their impact on the development of agriculture and rural areas;
- the changes in the characteristics of agricultural holdings under the conditions of application of the Common Agricultural Policy.

For the analyses and assessments of the characteristics of agricultural holdings, information from Eurostat, the national statistical institutes of both countries and the agricultural statistics of the ministries of agriculture of Bulgaria and Poland is used.

The subject of expert assessment are the revealed trends in changes in the number, size and characteristics of agricultural holdings. The directions, differences and speed of the processes of organizational restructuring are assessed.

Analysis of Changes in the Number and Size of Agricultural Holdings in Poland and Bulgaria

With the accession of the two countries to the EU (Poland at the beginning of 2004 and Bulgaria at the beginning of 2007), their agricultural sectors began to develop under the influence of the Common Agricultural Policy (CAP), historically the first of the EU's common socio-economic policies. Throughout the studied period, a decline in the number of agricultural holdings is observed (Table 1). This process unfolds at different speeds – significantly faster in Bulgaria. As a result, of the 2,476 thousand holdings existing in Poland (2005), 52.59% remained, while in Bulgaria, only 24.83% of the 534.6 thousand holdings survived, meaning that only one out of every four holdings endured. This phenomenon should be attributed not only to the increased requirements placed on agricultural producers but above all to positive changes in the labor market outside agriculture.

In Poland, the changes in the number of holdings were most significant during the first programming period and subsequently remained within the range of 2–8%. The

structure of Polish farms is still dominated (51.1%) by holdings with up to 5 hectares of agricultural land. The liquidation of agricultural holdings generally leads to the transfer of land to market-oriented entities, usually larger in size. Land concentration is also observed in the context of its exclusion (approximately 9.5% of agricultural land) for non-agricultural purposes (Karwat-Woźniak, 2018).

Table 1. Changes in the Number of Agricultural Holdings, 2005–2020

TIME	2005	2007	2010	2013	2016	2020
European Union	14 195 250	13 581 830	12 055 360	10 650 650	10 281 350	9 070 950
Bulgaria	534 610	493 130	370 490	254 410	201 280	132 740
Poland	2 476 470	2 390 960	1 506 620	1 429 010	1 410 700	1 302 330
	Changes compared to previous period (%)					
European Union	100	95,68	88,76	88,35	96,53	88,23
Bulgaria	100	92,24	75,13	68,67	79,12	65,95
Poland	100	96,55	63,01	94,85	98,72	92,32
	Changes compared to 2005 (%)					
European Union	100	95,68	84,93	75,03	72,43	63,90
Bulgaria	100	92,24	69,30	47,59	37,65	24,83
Poland	100	96,55	60,84	57,70	56,96	52,59

Source: Eurostat, Agricultural holdings, 2025.

In Bulgaria, in all periods, the reduction in the number of holdings exceeded 20%, and during 2016–2020 it reached 34%.

A comparison with EU average indicators shows that the number of agricultural holdings in both countries decreases at a higher rate.

A deeper analysis by groups according to the size of utilized agricultural land shows that the smallest farms have declined the fastest (Table 2). During the studied period, their relative share in Bulgaria decreased from 87.7% of all holdings to 44.98%, while by 2020 the share of farms with less than 2 hectares of utilized agricultural land in Poland amounted to only 18.68% (compared to 48.96% in 2005).

In Poland, the decrease in the number of holdings is mainly due to the reduction in the number of farms below 30 hectares of agricultural land (particularly those with 1–5 hectares – a decline of 44.4%). In many cases, these are farms of elderly owners who have withdrawn from active activity. The trend of the fastest decline among small and medium-sized farms is also emphasized by other researchers (Rossi, 2022), despite the support measures provided to them by the EU's Common Agricultural Policy.

The decreasing importance of holdings in this group is accompanied by an increase in all subsequent groups, albeit at different rates. This trend highlights the continuing concentration of production in both countries. In 2020, farms using more than 1,000 hectares of land in Bulgaria accounted for 5.99%, which is significantly higher not only than the Polish indicator (1.08%) but also than the EU average of 3.66%. These farms are generally capable of competing effectively in the agricultural products market and allow farmers to earn a satisfactory income from agricultural labor (Wrzochalska, Karwat-Woźniak, 2024). Nevertheless, their share remains small, at approximately 3.1%, while Polish farms of this size represent only about 4% of the total in the EU, despite Poland accounting for approximately 13% of all farms in the EU-27.

A comparison between the structure of the number of farms and the structure of the utilized agricultural land they manage reveals the strongly pronounced dualistic structure of Bulgarian agriculture, where 10% of farms with more than 50 hectares manage 83.8% of the utilized agricultural land. This means that the remaining 90% of farms operate only 16.2%.

Table 2. Structure of Agricultural Holdings by Size of Utilized Agricultural Land (2005–2020)

TIME	2005	2007	2010	2013	2016	2020
	Over 0 ha to less than 2 ha (%)					
European Union	49,90	48,15	48,72	44,85	43,66	41,74
Bulgaria	87,72	86,61	82,55	75,00	70,33	44,98
Poland	48,96	43,96	23,70	22,94	21,30	18,68
	2 – 9,9 ha (%)					
European Union	32,91	34,20	32,02	33,85	34,53	34,07
Bulgaria	9,78	10,23	11,51	15,80	16,10	27,11
Poland	36,63	40,74	53,59	52,93	54,64	55,23
	10 – 29,9 ha (%)					
European Union	9,97	10,13	10,61	11,61	11,76	12,65
Bulgaria	1,22	1,54	2,73	4,08	5,96	12,18
Poland	12,20	12,76	18,58	19,07	18,73	19,56
	30,0 – 99,9 ha (%)					
European Union	5,40	5,53	6,23	6,87	7,02	7,87
Bulgaria	0,55	0,75	1,68	2,60	4,30	9,73
Poland	1,92	2,22	3,48	4,29	4,47	5,45
	over 100 ha (%)					
European Union	1,82	1,99	2,43	2,82	3,03	3,66
Bulgaria	0,73	0,88	1,54	2,52	3,31	5,99
Poland	0,29	0,33	0,64	0,77	0,85	1,08

Source: Eurostat, Agricultural holdings by agricultural area, 2025.

As a result of the substantial decrease in the number of agricultural holdings, there has been a significant increase in the average size of utilized agricultural land (Figure 1). This increase is the most pronounced in Bulgaria – 4.85 times in 2020 compared to 2005 – and is among the highest in the European Union.

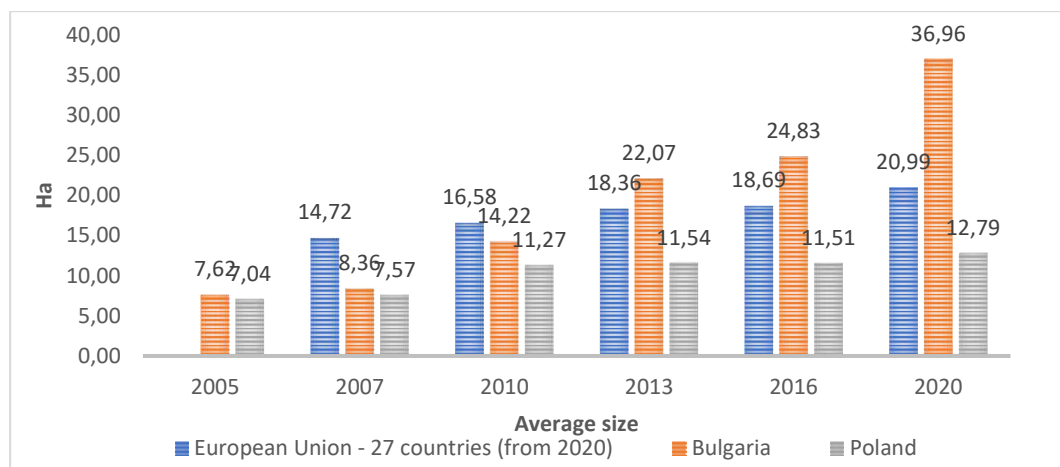


Figure 1. Average Size of Utilized Agricultural Land per Holding in Poland, Bulgaria, and the European Union (2005–2020)

Source: Eurostat, Agricultural holdings by agricultural area, 2025.

The increase in the average size of utilized land in Polish farms is significantly smaller – only 82.2%. This indicator is lower than the EU average and reflects the strong resilience and tradition of family farming in Poland.

Substantial differences are observed regarding the structure of agricultural holdings by economic size. In Poland, the groups of farms by size were relatively evenly distributed in 2010, within a range between 11.2% and 20.9% (Table 3). In the following years, the importance of farms with a small number of economic units decreased, and by 2020 the differences reached between 9.5% and 28.2%.

In Bulgaria, the strong predominance of small farms is characteristic. In 2010, the relative share of holdings with less than 4 economic units was 85%, while farms with more than 100 economic units accounted for only 1%. Although the share of small farms declined in the following years, by 2020 they still represented more than half (53.5%). At the same time, the relative share of all other groups increased, with the largest farms reaching 4.8% of total holdings.

With regard to the change in the legal status of holdings, a significant increase in legal entities is observed in both countries. In Poland, their number grew from 3,640 in 2010 to 7,370 in 2020, while in Bulgaria it increased from 3,200 to 5,780 legal entities.

Table 3. Structure of Agricultural Holdings by Economic Size (2010–2020)

Indicators	Number	Economic size						
		≤ 4	4–8	8–15	15–25	25–50	50–100	≥ 100
	Structure of Agricultural Holdings by Economic Size in Poland (%)							
- 2010	100,0	14,4	12,1	13,3	11,7	16,4	11,2	20,9
- 2013	100,0	13,1	12,9	12,2	10,8	16,3	13,9	22,8
- 2016	100,0	12,6	10,1	11,6	10,0	15,4	14,5	25,8
- 2020	100,0	12,7	9,6	10,4	9,5	14,6	15,0	28,2
	Structure of Agricultural Holdings by Economic Size in Bulgaria (%)							
- 2010	100,0	85,0	7,1	3,4	1,6	1,3	0,7	1,0
- 2013	100,0	75,4	10,8	5,4	2,8	2,4	1,3	1,9
- 2016	100,0	69,6	11,4	6,8	4,1	3,3	2,0	2,8
- 2020	100,0	53,5	13,7	11,1	6,9	6,3	3,5	4,8

Source: Central Statistical Office, 2014, 2017, 2022, Warsaw, Poland;
Ministry of Agriculture, 2012, 2022, Sofia, Bulgaria

Comparative Analysis and Evaluation of Trends and Causes

Based on the analysis of organizational structural changes in Poland and Bulgaria, a number of common trends as well as some differences can be identified (Table 4):

- **The changes in the two countries began under different conditions.** In Poland, a three-sector ownership structure existed: state, cooperative, and private farms. Among them, private farms used 75% of the land, with an average size of 4 hectares of agricultural land. State farms cultivated over 20% of the land, with an average farm size of 459 hectares. In Bulgaria, agro-industrial complexes managed about 85% of agricultural land. They combined cooperative and state farms, processing enterprises (and in some cases also the land of research institutes and experimental stations). The average utilized agricultural land per unit was about 12,500 hectares, with an average employment of around 2,200 people. The remaining part of the land (13.4% in 1989) was used by the personal holdings of cooperative members (Kanchev, Doitchinova, 2005).

Table 4. Comparative Analysis and Evaluation of Changes and Trends in the Development of Agricultural Holdings in Bulgaria and Poland

Indicators	Poland	Bulgaria	Evaluation
Organizational Structures at the end of the 1980s	Private farms used 75% of agricultural land, with an average size of 4 ha. State farms cultivated over 20% of the land, with an average farm size of 459 ha.	Agro-industrial complexes with an average size of about 12,500 ha. Personal holdings of cooperative members used about 13% of the agricultural land.	Substantial differences
Land reform	Relatively partial and affecting only the agricultural land of state farms, which led to reorganization and a return to smaller units. Only 5.5% remained in the public sector..	Comprehensive and prolonged – restoring ownership of agricultural land to the owners as of 1947. By 1999, state-owned agricultural land amounted to about 5%.	Substantial differences
Organizational Restructuring before EU Accession	In 2002, private farms used 94.5% of the agricultural land (15.9 million hectares), while individual farms accounted for 87.9% of the country's agricultural land. The average farm size was 7.6 ha.	According to the Ministry of Agriculture and Forestry, in 2003 private agricultural holdings used about 98% of the agricultural land, while the share of individual farms was 30%. The average farm size was 4.4 ha.	Substantial differences
Trends in Product Restructuring under the CAP	Sharp reduction in the production of animal products; Increase in the relative share of cereal production alongside a strong decline in livestock farming.	Sharp reduction in the production of animal products as well as fruits and vegetables; Increase in cereal production.	Similar trends
Trends in Changes of Organizational Structures under the CAP	Between 2002 and 2020, 33.9% of farms were liquidated. The average farm size was 11.8 ha.	The rapid decline of small farms has led to a strongly pronounced dualistic structure. The average farm size was 37 ha.	Similar trends with different rates of change
The Importance of Agriculture	Remains stable with a slightly expressed downward trend	Decreases	Similar trends

Source: Own research

- **In Poland during the 1990s, significant changes occurred in the structure of land ownership and management.** Up to that point, Polish agriculture

had a post-socialist three-sector ownership structure: state, cooperative, and private. The greatest changes took place in the state farm sector, which occupied approximately 18% of the country's agricultural land and was privatized from 1992 under a special law. Private farms were created on the basis of former state farms, through sale or lease, although they were still not fully established structures. Only a small part of the agricultural land – 933,500 hectares, or 5.5% – remained managed by the public sector. By the time Poland joined the EU, the land ownership structure had already acquired a clear form – practically all Polish agriculture was private. In 2002, private farms used 15,965,800 hectares, or 94.5% of the country's agricultural land, with the dominant users being individual farms, cultivating 87.9% of the land (Halamska, 2011).

- **Land reforms were carried out in both countries**, but in Poland the reforms affected state farm land, whereas in Bulgaria agricultural land ownership was restored to the landowners whose property had been nationalized in 1947. For this reason, the land reform lasted nearly eight years (1992–1999), under conditions of continuous amendments and changes in legislation. The legal restitution of agricultural land continued even after this period.
- **Organizational restructuring before EU accession.** In Bulgaria, during the years of land reform, a significant number of private-owner cooperatives were created. By 1998, their number reached 3,229. Following the establishment of the State Fund “Agriculture” and the implementation of the SAPARD program, their number began to decline. By 2003, cooperatives cultivated 40% of the total utilized agricultural area, commercial companies and sole traders 28%, and individuals 30%. At the same time, 75% of holdings were smaller than 1 hectare (10 decares) and cultivated less than 7% of the total utilized land. Holdings of more than 100 hectares (1,000 decares) managed 76% of the total utilized land. In Poland, restructuring during this period was mainly due to the decline in the number of farms under 30 hectares of agricultural land (especially those with 1–5 hectares – a decrease of 44.4%). The number of farms with 30 hectares or more increased (by 65.8%), including those with more than 50 hectares (an increase of 105.6%).
- **Product restructuring under the CAP** is characterized by similar trends in Poland and Bulgaria. A decline is observed in the importance of livestock production, along with an increase in cereal production. In Bulgaria, there is also a notable decrease in the traditional production of vegetables and fruits.
- **Changes in organizational structures under the CAP are also similar** – the number of agricultural holdings continues to decline, especially small and medium-sized farms. The average size of utilized agricultural land increases. The speed of this decline, however, differs between the two countries – farms in Bulgaria decreased much more rapidly. The resulting structures of

agricultural holdings by economic size show that groups are more evenly distributed in Polish agriculture. In Bulgaria, 10% of holdings (over 50 hectares) manage 83.8% of the utilized agricultural land. In both countries, the decline in the importance of small farms is also linked to the natural process of liquidation after the retirement of elderly owners. The reason is the absence of transfer of the holding to the next generation within the family.

- **The importance of the agrarian sector.** In Poland, the significance of the agrarian sector has remained relatively stable, while in Bulgaria it has decreased (Worldbank, 2025). Before EU accession, the share of the agrarian sector in GDP was 2.7% in Poland (2003) and 9.1% in Bulgaria (2006). By 2020, it amounted to 2.6% in Poland and 3.4% in Bulgaria.

Conclusion

Based on the comparative analysis and evaluation of the transformations in the agrarian sector of Bulgaria and Poland, it can be summarized that under the influence of the Common Agricultural Policy of the European Union, analogous processes are taking place in both countries. The differences in the pace of these processes are due to the different starting conditions shaped by previous historical periods, implemented land reforms, and the traditions of private farming. On this basis, the question of developing national agricultural policies and their alignment with the Common Agricultural Policy comes to the forefront. Poland and Bulgaria must create the necessary incentives for the recovery and development of livestock production and for offering traditional and new processed products on the European market. The increase in added value in Bulgaria's agrarian sector requires targeted measures for the development of vegetable and fruit production.

The results obtained from the present study provide a good foundation for further research into the strength of the impact of different factors on the processes of product and organizational restructuring.

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