

STRUCTURAL CHANGES IN THE CONTEXT OF THE EUROPEAN AGRICULTURAL MODEL: THE CASE OF BULGARIA

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Abstract

The structural changes in Bulgarian agriculture have been going on for three decades. Organizational and product restructuring over the last decade take place in the context of CAP implementation, which aims to shape the European model of competitive agriculture and sustainable rural development.

The purpose of the report is to assess the structural changes in the agrarian sector and their impact on rural areas. The focus is on the assessment of the established models of agriculture and their impact on the economic and social processes in the planning regions. The methodological framework includes the use of the methodical approach for multi-criteria assessment of structural changes in the six regions of the country. On the basis of an assessment of the changes in the production specialization, organizational and technological parameters are outlined the characteristics of the Northern and Southern models of agriculture in Bulgaria and their main impacts on the rural areas development.

Key words: structural changes, northern and southern models of agriculture, rural development.

Introduction

Over the last decades, constant structural changes take place in Bulgarian agriculture. At the end of the 20th century they were caused by the ongoing land and organizational structural reforms. In the current century these changes are mainly due to the introduction of elements of the Common Agricultural Policy (CAP) and the implementation of the majority of its mechanisms since 2007. The CAP has become a major driver of changes not only in the product and organizational structure of the agrarian but also led to serious consequences for rural areas.

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1. Literature review

In the agriculture is carried out the sequential process of structural change characterized by a decline in the number of farms. It is appreciated positively by economists as it results in an increase in productivity and efficiency of agriculture by reallocating land, labor and other productive factors, and ultimately leads to economies of scale (Zimmermann and Heckeley, 2012). Such findings have been reached by a number of authors (Bojnec and Latruffe, 2013; Muger and Langemeier, 2011; Piet, Latruffe, Le Mouel and Desjeux, 2012) whose research interest is focused on assessing the links between farm size and their level of efficiency and performance.

Regardless of the economic benefits, representatives of various scientific disciplines and politicians question the extent to which restructuring and reducing the number and importance of smaller labor farms is acceptable (Buckwell, 2015). Together with the still strong attachment to the highly fragmented structure of family farms, are increasing the consumer concerns and requirements on the quality of agricultural products.

Basically, some authors (Balmann and Valentinov, 2016) identify at least two major issues in the public assessment of agricultural structural change. The first concerns the inequalities of small farms and the consequences of structural change for poor farmers.

The second major problem of structural change is "criticism of the tendency to move away from rural agriculture to some sort of "industrial farming".

Both types of concern are not new and are often used as arguments in favor of political protection and regulation of the agricultural sector, both in the EU Common Agricultural Policy and in national policies.

The debate on inequality in farm size is particularly intense in Eastern European countries, where large-scale land deals are taking place. There are growing concerns that an increase in the concentration of land will have a detrimental impact on farming communities and rural development (Kay, Peuch and Franco, 2015; Van der Ploeg, Franco and Borrás, 2015).

In recent years increased the number of publications dedicated to the role of modernization of agriculture, its concentration and specialization and their impact on social processes in rural areas. Van der Ploeg (2018) considers the two related processes - reducing the number of farms and the ways of organizing the process of production as two dimensions of the process of de-peasantization, and stresses that "agricultural production was to become a more peasant-like and more entrepreneurial "(Van der Ploeg, 2018a, p. 238).

Global trends in family farming decline, intensification and industrialization of agriculture and increased competition for land require to seek for adequate solutions for farm and rural adaptation (Hebinck, 2018). Some authors believe that farmers are expanding their economic base by combining it with other activities and thus developing multifunctional farms (Van der Ploeg 2018b; Oostindie, 2015), others – that in rural areas, local actors build different networks to create added value for products (Woods, 2015; Cheshire & Woods, 2013), third part of authors propose that - the increase in agro-environmental capital of family farms can contribute to their welfare through resource re-allocation and production based on ecological processes (Nelson & Stock , 2018; Van den Berg et al., 2018).

2. Changes in production structure

During the first programming period of Bulgaria's EU membership, the economic importance of the agricultural sector in the Bulgarian economy stabilized (4.7-4.8%). The share of employed in total employment remains 19%, with very high relative share (86.4%) of self-employed (NSI, 2015).

Agriculture gross added value increased by 11%, while production value increased by 21% in 2014 compared to 2007. These results are obtained under conditions of significant product restructuring - a significant increase in crop production (59%), a decrease in the value of livestock production (13%) and a continuing decrease in the relative share of livestock farming in the agrarian sector. The latter reaches a very low level - only 28.5%. (Doitchinova J., Kanchev, I., Terziyska R. & K. Todorova, 2018)

Restructuring is also observed in the plant sector itself. In many regions of the country, the number of cultivated crops decreases, with only 4 crops grown over 75-78% of the arable land during the last 5 years. The trend towards strengthening the monocultural character of agriculture is positively assessed in view of the increasing competitiveness of some productions. For example, from the assessment of the index of the productive component of competitiveness some authors conclude (Ivanov et al., 2017) that in the world plan, "the Bulgarian grain production is highly competitive, this competitiveness even grows in the period 2007-2016 and from a coefficient around 0.7 at the beginning of the period rose to 0.76".

From the point of view of exploiting the production potential of the area, researchers believe that ... "close specialization, especially in the production of grain and some capital intensive technical crops, is also a prerequisite for reducing return on land use" (Doitchinova, Harizanova, Miteva, p.232). The use of a unit of area for cereals or sunflower creates a 14-15 times lower return than its use for tomato-field production (Ministry of Agriculture and Foods 2013). Moreover, monoculture agriculture leads to a reduction in soil fertility and biodiversity, to a reduction of employment in rural areas, and to the intensification of the migration processes of rural population. (Doitchinova J., Harizanova, H. & Miteva, A., 2017)

The resulting production structure can also be compared with the EU average indicators. Bulgaria has and uses less than 4% of EU land resources but produces just under 1% of GVA. The gross added value per unit of agricultural land in Bulgaria is 300 euro / ha at an EC average of 880 euro / ha (Ivanov et al, 2017). The ratio of production factors land/capital is 2 times lower in Bulgaria than in the EU, which is an indicator of low labor efficiency.

The negative trends in livestock development are due to the continuing decrease in the number of animals and the low productivity of a significant part of them. In the research period mostly declined the number of goats (by more than 40%), pigs (by more than 30%), dairy cows (by 18%) and sheep (by 12%). Only the number of buffaloes increases - by 20%. As a result of these changes, the production of all livestock production declined (from 7 % at pork meat to 30 % at sheep and goat milk).

The number of livestock farms is also decreasing - dairy farms by 80,3 %, sheep farms by 80,9 % and goat farms by 90,5% compared to 2007 (Table 1). The positive result is an increase in the average number of animals in one farm, reaching 11,5 for dairy cows, 35,2 sheeps, and so on. These average herd sizes are significantly lower than those of main EU producers, which is one of the explanations for the low competitiveness of our animal products.

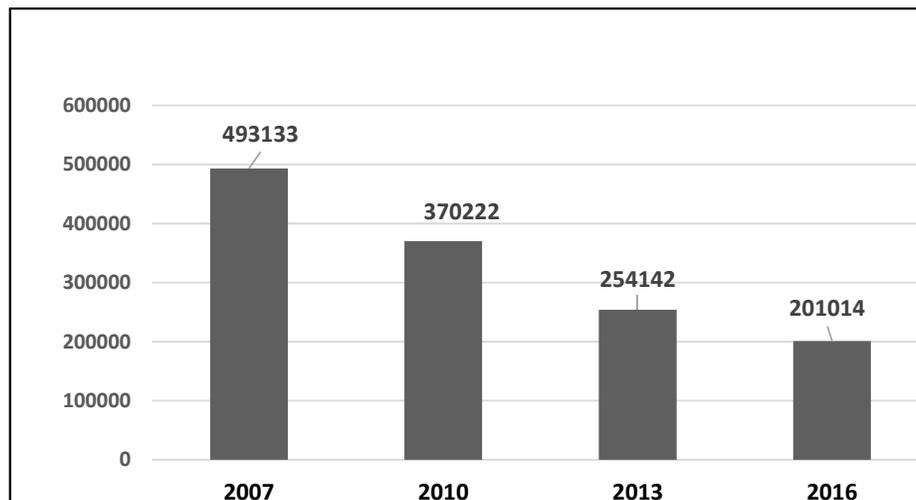
Table 1. Changes in the number of livestock and milk farms (thousand)

	2007	2017	2017/2007 (%)
Number of cows	335,9	252	75,0
Number of dairy farms	122,1	24,1	19,7
Number of dairy farms (1-9 cows)	117,1	16,1	13,7
Number of sheep	1292,2	1150,5	89,1
Number of sheep farms	149,2	27,5	19,1
Number of sheep farms (1-9 ewes)	126,8	14,5	11,4
Number of goats	431,9	232,8	53,9
Number of goat farms	153,0	14,6	9,5
Number of goat farms (1-9 goats)	148,5	11,3	7,6

Source: MZFF, Department "Agrostatistic"

3. Changes in organizational structure

Over the past decade, the process of significantly reducing the number of farms has continued. For the period 2007-2016, 59% of agricultural holdings have ceased activity, mostly in the groups up to 2 ha and 2-5 ha. This process is accompanied by an increase of the average amount of used agricultural land from one holding - from 6.33ha (2007) to 20.58 ha (2016). Regardless of these changes, the economic potential of agricultural farms in Bulgaria is low - 4,4 economic units (EU) with an average of 15,2 EU for the European Union. There is a large inequality, both in the distribution of the used agricultural land and in the structure of the common standard production.



Source: MZFF, 2008, 2018, Department "Agrostatistic"

Figure 1. Number of agricultural holdings (2007-2016)

Table data 2 show that up to 4000 euro production has 69.55% of farms and their relative share in production is only 5.21%. At the same time, the production of over 250000 euros is carried out by 1.44% of the farms, but their relative share in production is 58.52%.

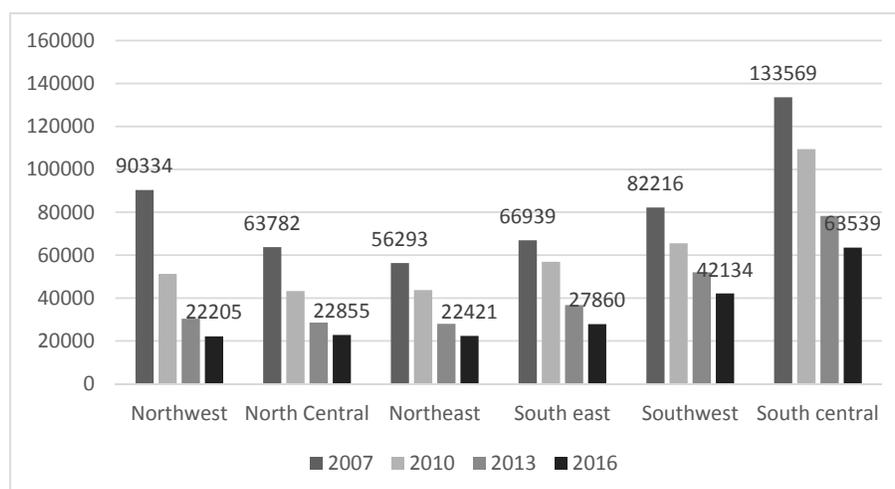
Table 2. Structures of agricultural holdings by economic units and common standard production

Classes	Threshold in EUR	Structure of agricultural holdings by economic units	Structure of common standard production
I	< 2 000	52.18	2.59
II	>= 2 000 < 4 000	17.39	2.62
III	>= 4 000 < 8 000	11.42	3.44
IV	>= 8 000 < 15 000	6.84	3.98
V	>= 15 000 < 25 000	4.10	4.21

Classes	Threshold in EUR	Structure of agricultural holdings by economic units	Structure of common standard production
VI	>= 25 000 < 50 000	3.32	6.20
VII	>= 50 000 < 100 000	1.97	7.24
VIII	>= 100 000 < 250 000	1.33	11.20
IX, X, XI, XII, XIII и XIV	>= 250 000	1.44	58.52

Source: MZFF, 2018, Department "Agrostatistic"

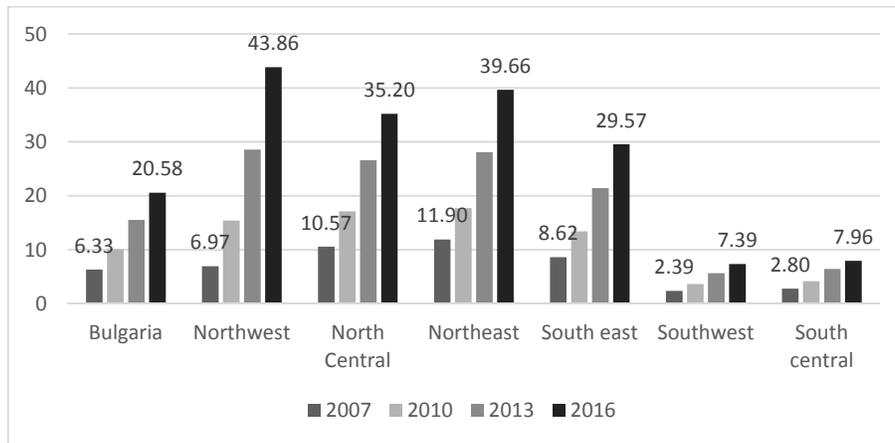
The process of concentration of production takes place in all regions of the country, but at different rates. Fastest decline the number of farms in the three planning regions of Northern Bulgaria and the Southeastern Planning Region. If in the country as a whole 59% of the farms stopped activity for the research period (Figure 2), but this process is more rapid for the Northwest region where more than 75% of the farms ceased their activity, 72% of the farms in the South East region do not exist more. Slowest is the decline in the number farms in the Southwest region - by 49% and in the South Central region - by 51.5%.



Source: MZFF, Department "Agrostatistic"

Figure 2. Changes in the number of farms per planning area

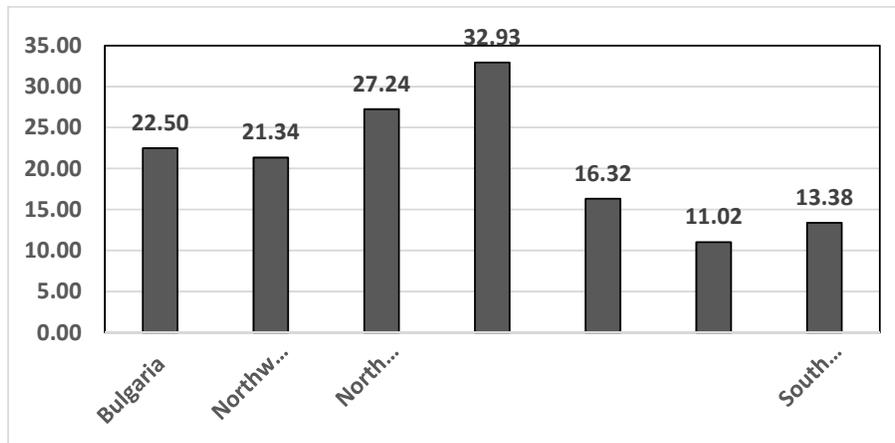
These changes have also found expression in the sensitive changes in the average size of agricultural land used in the different regions. Average for Bulgaria, the agricultural holdings has increased the amount of used agricultural land by 3.25 times, ranging from 6.3 times in the Northwest region to 2.84 times in the South Central region and 3.09 times in the Southwest region (Figure 3).



Source: MZFF, 2018, Department “Agrostatistic”

Figure 3. Changes in the average size of farms (ha)

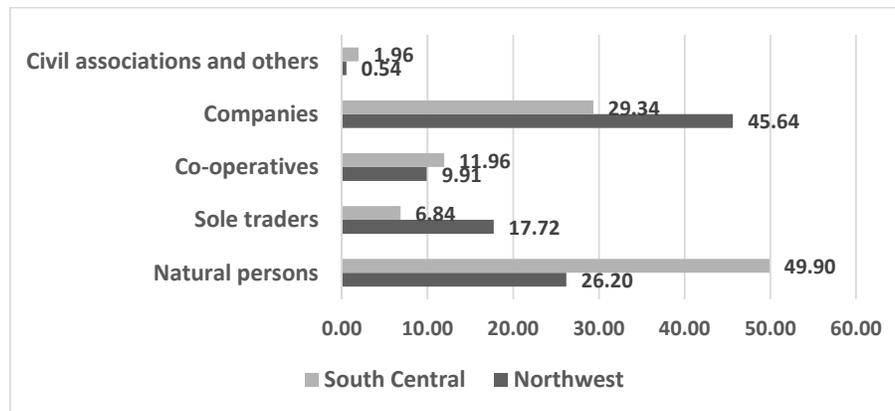
The average size of agricultural holdings by regions of the country to a great extent reveals the differences in the specialization of the predominant type of farms in them. In the Southwestern and South Central regions, most numerous are the farm holdings that grow vegetables, fruits and various animals. In the regions of northern Bulgaria the large agribusinesses, which lease more than 90% of the agricultural land predominate. This has also been reflected in the level of lease payments, which are almost three times lower in the Southwest region than in the North-East region (Figure 4).



Source: National statistical institute, Agricultural land market and rent

Figure 4. Level of rental payments by country (2016)

Even more significant are the different results of structural changes when comparing the distribution of farmland between different agricultural holdings. In the Northwest Region, 45.6% of the lands are managed by commercial companies and 26.2% are owned by individuals, while in the Southern Central Region the relative share of holdings owned by individuals is 49.9% and of the commercial companies - 29, 34% (Figure 5).



Source: MZFF, Department "Agrostatistic"

Figure 5. Structure of used agricultural lands by organizational forms in the North-western and Southern central regions of Bulgaria

4. Rural regions - between competitive farming and depopulation

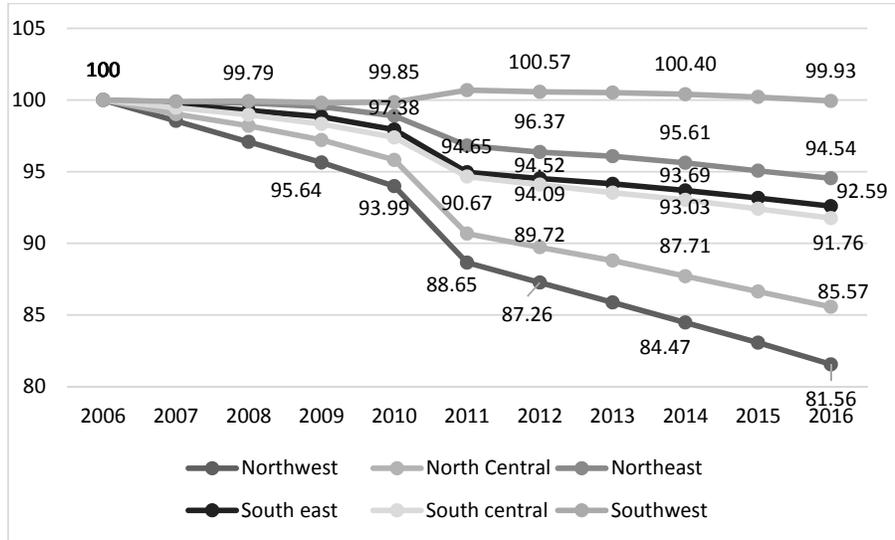
Agriculture has traditionally served as an engine for the development of the local economy and the welfare of its inhabitants. In this sense, the link between agriculture and regional development has always been assessed as strong. The observed changes in farm size and the type of produced crops lead to structural imbalances and tendencies towards monoculture in part of rural areas. In recent decades, they have been particularly pronounced in areas where land is used by large farms with the characteristics of the so-called "Northern European model" (EU, 1997). The issue of large farms is often closely related to the issue of land distribution and the attitude of large farms to small farmers and the population in the rural areas. As some researchers rightly point out, this leads to unemployment and the creation of a group of workers deprived of property without alternative employment opportunities. (Schutter, 2011; Visser et al., 2012) A natural result is an increase in migration and depopulation of rural areas.

Similar changes, but at a slower pace, are observed in the areas where the southern European model has a leading role. A comparison of the employment changes between two planning regions in Bulgaria shows that if the agricultural employment in the Northwest region has fallen by 10% for the period 2006-2015, it has grown by 13% in the Southern central region.

In the northern regions of Bulgaria dominate large farms whose competitiveness is growing, but this is accompanied by an increase in the number of rural residents leaving rural areas. Figure 6 shows that the population of the Northwest region has declined by 18.5% in the last ten years, with 14.5% for the North Central Region.

In the southern regions of the country the rates of migration are lower, with the population of the Southwest region remaining the same, and the population of South Central region decreased by 4.5%.

Equally important is the problem of aging rural population and the lack of the necessary number of skilled workers to work in modernizing farms.



Source: Own study based on NSI data for Population

Figure 6. Dynamics of population in regions for the period 2006-2016

Conclusions

The structural changes over the past decade are mainly under the CAP influence and do not create the conditions for better utilization of the production potential of Bulgarian agriculture. The negative downward trend in the production of products where there is greater potential for creating added value through storage, processing and marketing in rural areas continues. In Bulgarian conditions, these are the products that use the natural resources more efficiently (soil types of different natural fertility, water, etc.) and create employment and higher income for rural residents. In practice these are the products for which Bulgaria has appropriate natural and climatic conditions and competitive advantages. Despite a number of national programs to support the so-called vulnerable production (vegetable production, fruit

growing, dairy farming, etc.) that started in 2010, the negative trends have not been overcome.

In general, the economic performance of farms (especially those specializing in the production of cereals and oilseeds) is improving but accelerates the depopulation of rural areas and the deterioration of living conditions for rural residents. Not only in the semi-mountainous, but also in some plane regions, there is a growing number of Bulgarian villages that have several dozen permanent residents or even do not have them and should be deleted from the country map.

Successive efforts are needed for the development of policies and programs by the Bulgarian state to increase the competitiveness of traditional products for Bulgarian agriculture and thus to create prerequisites for employment and entrepreneurship of more rural inhabitants.

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