

---

**STATE AND DEVELOPMENT OF THE HUMAN CAPITAL IN THE AGRICULTURAL SECTOR IN BULGARIA AFTER THE ACCESSION TO THE EUROPEAN UNION**

**Milena Tepavicharova**

Higher School of security and economy - Plovdiv, Bulgaria [m\\_ivanova\\_zlatanova@abv.bg](mailto:m_ivanova_zlatanova@abv.bg)

**Abstract:** After the country's accession to the European Union /EU/ in 2007, the negative production and economic performance is being overcome very slowly and with difficulties. One of the main reasons for this is the low skill levels of the employed in the agricultural sector, and the inefficient management. Nowadays, the economic situation of the companies largely depends on the level of development of the human capital. It is therefore necessary to analyze the situation and to identify the opportunities for the development of the human capital in the agricultural sector, as well as to reveal opportunities for its effective use and management.

The purpose of this article is to examine the situation and to present opportunities for the development of the human capital in the agricultural sector in Bulgaria after the country's accession to the European Union.

The study covers the period 2007 - 2016. It is based on data from the National Statistical Institute, newsletters of MAF - Agrostatics directorate, specifically designed for the purpose of the research questionnaires, direct contacts, business documentation and more. The method of the interview was used to specify the data and information.

The study on the status and development of the human capital in the agricultural sector shows that the negative trend in employment can be taken as a consequence of the reforms in the agricultural sector and the impact of the economic crisis.

One of the most pressing problems of the human capital in the farms in the agricultural sector is the aging of the managerial and executive staff. Their prioritized rejuvenation will increase the capacity to implement innovative techniques and technologies, apart from highly efficient new plant varieties and animal breeds, all this turning into a prerequisite for achieving better economic results.

The higher education and training is essential to realize positive economic results. The sophistication of skills and expansion of the knowledge and experience through additional specializations in the country and/ or abroad of the management staff should become a mandatory practice on the farms in the agricultural sector. This is a key factor for the efficient management and the acquisition of positive economic results.

On the other hand, the low level of education of the executive personnel from the agricultural farms is one of the main reasons for the overall lower labor productivity, and hence the weak economic performance. The improvement of the professional training and qualifications of the people hired in the agricultural sector can lead to increased productivity and ensure a stable and guaranteed income. From this perspective, investment in the human capital will increase the individual productivity, and hence the economic performance of the holdings.

**Keywords:** human capital, agrarian sector, Bulgaria

## **INTRODUCTION**

The socio-economic changes in Bulgaria in recent years have had a significant impact on the status and development of the human capital in the agricultural sector. As a consequence, agricultural production fell dramatically. After the country's accession to the European Union /EU/ in 2007, the negative production and economic performance is being overcome very slowly and with difficulties. One of the main reasons for this is the low skill levels of the employed in the agricultural sector, and the inefficient management.

Nowadays, the economic situation of the companies largely depends on the level of development of the human capital. The low level of professional knowledge, skills and competencies, as well as the limited opportunities for professional development and qualification adversely affect the economic performance. It is therefore necessary to analyze the situation and to identify the opportunities for the development of the human capital in the agricultural sector, as well as to reveal opportunities for its effective use and management.

The purpose of this article is to examine the situation and to present opportunities for the development of the human capital in the agricultural sector in Bulgaria after the country's accession to the European Union.

## **MATERIAL AND METHOD**

The present study is conducted in two parts. The first one analyzes the status and development of the human capital in the agricultural sector during the period 2007 – 2016. The major problems of the workforce development in the rural areas during this period are analyzed. The study is based on data from the National Statistical Institute

/NSI/ and bulletins of the Directorate of Agricultural Statistics at MAF for the period 2007 – 2016. During the processing and data analysis we used the methods of the descriptive statistics.

In the second part are evaluated the opinions of the farmers and agriculture experts working in the territory of the SCR on the problems and prospects of development of the human capital in the agricultural sector. For the purposes of the study we applied a pre-designed questionnaire. The total number of respondents in the method of the interview is 69. Based on the responses received, the problems are presented and assessed, and additionally, prospects for the development of the human capital in the agricultural sector are identified. For processing and data analysis we administered the statistical package SPSS 13.0 and Microsoft Office (Word, Excel, Power Point).

## RESULTS AND DISCUSSION

Despite the stabilization of the macroeconomic environment after Bulgaria's accession to the EU, the results of the agricultural sector are far below its potential. This negative trend is also observed in terms of the effective use of the human capital. This largely prevents the creation and development of sustainable and competitive agricultural structures.

A crucial factor to achieving a sustainable and efficient agricultural sector is the status and development of the human capital employed in the sector. At present, 23% of the active population of Bulgaria lives in rural areas. About 57% of them are employed in the agricultural sector.

NSI data for the period 2007 – 2016 display that the trend in the number of employed persons in the country is negative. This trend is also true for agriculture. In 2007 the number of employed in the sector is 738 600, and in 2016 it is decreased to 581 320. In 2007, the employed in the agricultural sector are 20.4% of the totally employed in the country, and in 2016 their share drops to 19.3%. The analysis indicates that the unfavorable macroeconomic environment in Bulgaria for the period 2007 - 2010 has a negative impact on the employment in the agricultural sector /Table 1/. The same trend continues until 2016, but at a slower pace.

*Table 1. People employed in the Bulgarian economy by sector*

Years	Total employed	Number of employees by economic sectors					
		Agricultural sector		Industry		Services	
		thousand	%	thousand	%	thousand	%
2007	3 612.0	738.60	20.4	1 011.10	28.0	1 862.30	51.6
2010	3 508.0	617.41	17.6	957.68	27.3	1 932.91	55.1
2016	3 005.9	581.32	19.3	871.96	29.0	1 552.62	51,7

*Source: NSI*

The unfavorable socio-economic conditions and factors determine the low labor productivity /Table 2/. During the researched period, it is the lowest in the agricultural sector. In comparison, the gross value added /GVA/ in the industry and services is about three times higher. If the rate of inflation for the period is also reported, the indicators in agriculture acquire negative values. The decline in labor productivity leads to a lower level of competitiveness and inefficient agro production.

*Table 2. Level of labor productivity by economic sectors*

Economic sectors/indicators	2007	2016	Change/%
<b>Agricultural sector</b>			
GVA per employee, lv	4 461	4 494.6	0.75
Value added per man hour, lv	3.0	3.03	1.00
<b>Industry</b>			
GVA per employee, lv	17 178.3	20 364.2	18.55
Value added per man hour, lv	10.1	12.2	20.80
<b>Services</b>			
GVA per employee, lv	16 500.2	18 303.9	10.94
Value added per man hour, lv	9.8	10.8	10.21

*Sources: NSI/*

In the process of its development, the agriculture goes through drastic structural changes as a result of restoration of the land ownership. The organizational structure of the farms in the agricultural sector is radically altered.

During the period 2007 – 2016, in the terms of the actual membership in the EU, the modification in the structure of farms continues. The outlined trend towards concentration of the land and consolidation of the farms, cause changes in the structure of the workforce, too. According to the research material of the Directorate of Agricultural Statistics at MAF, for the period 2007 – 2016, the number of farms in the agricultural sector decreased by 23% /Table 3/. At a more detailed analysis of the changes in the holdings a decline in physical persons with almost 24% is marked, and in cooperatives - with about 7%. However, with sole-proprietor traders and companies, an increase in the number of farms with more than 20% is observed.

**Table 3. Human capital - data according to the organizational and economic form of the farms**

Legal Status	2007 г.				2016 г.				2016/2007	
	Farms, nr	Farms, %	Employed, nr	Employed, %	Farms, nr	Farms, %	Employed, nr	Employed, %	Farms	Employed
Individuals	476 956	98,97	901280	94,96	363 620	98,0	684 682	92,7	-23,76	-24,03
Sole traders	1 828	0,38	8 661	0,92	2 270	0,61	9 602	1,3	24,18	10,87
Commercial companies	1 763	0,37	21 839	2,30	3 900	1,05	28 805	3,9	21,22	31,90
Associations and other	1 373	0,28	17 400	1,82	1 280	0,34	15 511	2,1	-6,77	-10,85
<b>Total</b>	<b>481920</b>	<b>100</b>	<b>949180</b>	<b>100</b>	<b>371070</b>	<b>100</b>	<b>738 600</b>	<b>100</b>	<b>-23,00</b>	<b>-22,08</b>

Sources: MAF, Agrostatistics

These fluctuations in the number of farms lead to alternation in the employment in them, too. In the holdings of physical persons, a decrease of employees by 24% is noted, while in the cooperatives - about 11%. A positive trend is observed in sole-proprietor traders. The number of employees in those farms increases by over 10%. Even more optimistic is the trend in the commercial companies. Their employment growth is over 31%. This shows that the process of consolidation of the holdings in the agricultural sector *leads to an increase in the number of employees in them, too.*

The major share of the employed in the farms of the agricultural sector is formed mainly by family labor. /Table 4/. Despite the structural changes, it still occupies 91% of the workforce in the sector. The trend is towards its reduction on account of non-family labor. During the period 2007 - 2016, a decrease of employment of the owners of the holdings by 4% is revealed, as well as of other members of the household - by 5%.

**Table 4. Distribution of the workforce on the farms in the agricultural sector**

Labor forces		2007 / %	2016 / %
		<b>100</b>	<b>100</b>
which	<b>Non-family</b>	5	9
	<b>Family</b>	95	91
	which		
	<b>Owner</b>	55	51
	<b>Husband/ Wife</b>	30	39
	<b>Other household members</b>	15	10

Sources: MAF, Agrostatistics

One of the main problems in the agricultural sector in Bulgaria is the aging of the human capital. In 2016 only 12% of those employed in agriculture are under the age of 35 years. At the same time the employees aged 55 years and above are 50% /Table 5/. Overall, for the period 2007 – 2016, a decline of the labor force in all age groups is evident. The most significant decrease is reported in employees of over the age of 65 years. However, their share

remains relatively high, based on other age groups. Low incomes and the adverse working conditions in the agricultural sector do not encourage the young people to engage in agricultural activities. This carries real risk of labor shortages, especially in labor-intensive industries.

*Table 5. Age structure of the workforce in agriculture*

Age	Labor force, nr		Managers, nr		Change, %	
	2007	2016	2007	2016	Labor force	Managers
15- 34	73 860	71 220	11 600	8 780	-3.75	-24.31
35 – 54	265 896	222 688	94 200	67 060	-16.25	-28.81
55 – 64	179 703	136 772	116 700	110 140	-23.89	-5.62
> 65	219 141	150 637	154 100	107 050	-31.26	-30.53
<b>Total</b>	<b>738 600</b>	<b>581 317</b>	<b>376 600</b>	<b>293 030</b>	<b>-21.29</b>	<b>-22.19</b>

Sources: MAF, Agrostatistics

The problem of aging workers in the agricultural sector is noticeable in terms of the farm managers. In the age group between 15 and 34 years, the number for 2016 is only 8 780. This is only 3.0% of the total. In the age group over 65 years they are over 36%. The lack of initial capital and managerial skills are significant barriers to the entry of young people in agriculture. It is important to note that the majority of the managers do not have specialized training (education) in the field of agriculture as well as in the field of business management. **Only 2.5% of them have secondary education in agriculture and 1.6% have higher education in the field of agricultural sciences.**

The analysis of the condition and development of the human capital in the agricultural sector shows that the negative trend of decreasing employment can be considered as a consequence of the reforms and the impact of the economic crisis. The introduction of the Single Area Payment Scheme is the direct cause of the land consolidation into larger farms and the reduction of the number of holdings of physical persons. That, at this stage, reduces the capacity of the agricultural sector to provide jobs, especially for low-educated individuals.

The overall decline in the human capital in the farms logically leads us to the problem of unemployment in the rural areas. According to NSI data, there is an increase of the registered unemployed in the rural areas in recent years, as by 2016 the levels gravitate around and exceed 30%. The problem is exacerbated even more by taking into account the high level of long-term unemployment. In the rural areas it is around 15%. The high long-term unemployment can be explained by the lack of job opportunities in the rural areas and the low quality of the human capital.

In terms of employment in the subsistence farms /family farms/, an increase in underemployment of individual farmers is noted, together with a reduction of their income. Therefore, the need to provide jobs in the rural areas outside agriculture is increasing.

In this direction, the CAP has launched a project to stimulate the development of non-agricultural activities in the rural areas. Still, a relatively small share of the owners develop profitable activities outside agriculture, mainly due to lack of initial capital and managerial expertise for the development of non-agricultural business. The current increase in the number /5.7% / of holdings engaged in non-agricultural activities is positive, but for the period 2007 - 2016, the expansion of non-agricultural employment cannot compensate for the reduction in the total number of people employed on the farms in the agricultural sector. However, it should be noted that the recent years mark an increase in the number of the farms of physical persons engaged in food processing, rural tourism and services.

From the above exposed information on the status and development of the human capital in the agricultural sector, a number of problems is outlined. Of paramount importance are:

- The aging of the human capital;
- Low level of remuneration;
- Low level of education and self-education;
- Unsatisfactory management skills of the managers;
- Inadequate training of the staff;
- The lack of sufficient administrative capacity and others.

This is confirmed by a survey made of 69 farmers and agriculture experts on the problems and prospects of development of the human capital in the agricultural sector. According to 27.1% of the respondents, the main difficulties in terms of the human capital are mainly related to the shortage of qualified administrative staff. Almost as many, 25.4%, report as a major problem the shortage of managerial personnel. This confirms the need for urgent

measures in terms of training and qualification of the human resources. In this sense, the mutual combination of external training and self-learning offer great potential for improvement.

The respondents place in the foreground also the problems related to:

- The low level of professional skills and competencies of the managers and executives. According to 64.4% of the respondents this is a major problem in the search and recruitment of labor in the agricultural sector;
- The shortage of qualified professionals is bound to delay the processes of modernization, technical and technological renovation. This view is supported by 55.9% of the respondents;
- According to 52.5%, a persisting trend is the lack of technical and technological competence of the intermediary and executive managers in the agricultural sector. These competencies are crucial to the success of the farm.
- Violation and incompliance with the technical, technological and organizational discipline of the staff, has also emerged as a major problem in the farms in the agricultural sector /49.2% /
- Lack of skills in teamwork /45.8% /, shortage of executives /33.9% /, etc

Apart from the above, the vocational training system of the human capital in the sector and the range of consultancy services are also insufficiently developed. Therefore, 72.9% believe that improving the professional training and qualifications of the people employed in the agricultural sector could bring positive development of the farms.

Nearly 30% of the respondents highly appreciate the support for the establishment of young farmers' holdings, which is especially important for the recovery of the agricultural sector. The activities for the modernization of the farms in the agricultural sector must be a priority in the development of the sector, according to 44.1% of the respondents. The benefits of direct funding are supported by 54.2% of the respondents, as they are particularly important for income support. Ensuring stable and guaranteed income will limit the outflow of employment from agriculture.

## CONCLUSION

The study on the status and development of the human capital in the agricultural sector shows that the negative trend in employment can be taken as a consequence of the reforms in the agricultural sector and the impact of the economic crisis.

One of the most pressing problems of the human capital in the farms in the agricultural sector is the aging of the managerial and executive staff. Their prioritized rejuvenation will increase the capacity to implement innovative techniques and technologies, apart from highly efficient new plant varieties and animal breeds, all this turning into a prerequisite for achieving better economic results.

The higher education and training is essential to realize positive economic results. The sophistication of skills and expansion of the knowledge and experience through additional specializations in the country and/ or abroad of the management staff should become a mandatory practice on the farms in the agricultural sector. This is a key factor for the efficient management and the acquisition of positive economic results.

On the other hand, the low level of education of the executive personnel from the agricultural farms is one of the main reasons for the overall lower labor productivity, and hence the weak economic performance. The improvement of the professional training and qualifications of the people hired in the agricultural sector can lead to increased productivity and ensure a stable and guaranteed income. From this perspective, investment in the human capital will increase the individual productivity, and hence the economic performance of the holdings.

After 2009, the European Economic Recovery Plan has taken priority actions to enable rapid adaptation of the economies of the Member States to the challenges posed by the economic and financial crisis. These actions are targeted at helping the farms engaged in agricultural and non-agricultural activities. The support will promote the rural development through the creation of more and better jobs. On its turn, it will help to diversify the rural economy of Bulgaria, which is currently heavily dependent on agriculture.

## LITERATURE

- [1] Agricultural reports, MAF, 2007 – 2016 (BG)
- [2] Statistical Yearbook, 2007 – 2016, NSI (BG)
- [3] Survey among farmers, Agricultural University, 2016 (BG)
- [4] Newsletters, Department of Agrostistics, 2007-2016 (BG)

- [5] Bencheva, N., M. Tepavicharova, (2015), Specific features of the human resources management in the various forms of organization in the farms of the agricultural sector, In: Scientific journal “Economics and finance”, Prospects of the economic development in the global crisis, p.73-78
- [6] Bencheva, N., M. Tepavicharova, (2016), Factors for the development of the educational and professional qualification profile of the human resources by types of farms in the agricultural sector, In: Collection of Articles from the international conference "Modern security threats to Europe," VUSI, Plovdiv, Bulgaria, pp.141-151
- [7] Bencheva, N., M. Tepavicharova, S. Todorova, (2016), Opportunities for efficient organization of the work of the human resources in the farms of the agricultural sector, In: Scientific journal “Economics and finance”, Prospects for development of education and science, Academic Publishing House of the Agricultural University, Plovdiv, Bulgaria, pp. 159 – 162
- [8] Bencheva N., M.Tepavicharova, (2015). State and problems of the vocational development and qualification of human resources in the agricultural sector, International conference Changes and perspectives in the rural areas and in the agriculture of Bulgaria, Poland and other EU Member States, Sofia, pp. 43-54
- [9] Bencheva, N., (2011), Regional clusters to improve efficiency and competitiveness of agricultural production, Publishing House of Academic Agricultural University, Plovdiv (BG)
- [10] Georgieva, M., V. Lalosheva, L. Vasilev, (2015), The Common Agricultural Policy of the European Union 2014 - 2020: More effective, fairer, a greener, Project CAP for CAP, :ekonomedia, Sofia, Bulgaria (BG)