

EMPLOYMENT IN THE AGRICULTURE: A COMPARATIVE ANALYSIS REPUBLIC OF MOLDOVA VERSUS EUROPEAN UNION MEMBER STATES

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Abstract

This paper addresses the problem of employment in the world's oldest industry - agriculture. During the development of the society, agriculture has gone through several transformations, with labor playing an important role in this. In recent years, agriculture is also undergoing major global transformations, with direct consequences for the workforce composition. The major changes that have taken place in the agricultural sector in the Republic of Moldova have not led to a decreasing level of employment. However, Moldova has a high level of agricultural employment. Moreover, also influenced by climatic factors, this sector is underperforming compared to other sectors. Own-account workers and unpaid family workers are the most common forms of employment in the Republic of Moldova. Most of the time, these categories of labor do not have the necessary qualifications to carry out agricultural activities, which is why they suffer in terms of agricultural productivity. In this context, several occupational indicators are analyzed in order to highlight the most obvious employment problems in agriculture. The occupational indicators analyzed in comparison with those recorded in the Member States of the European Union (EU) make it possible to identify similarities and disparities in agricultural employment. The information base for the analysis of the occupational indicators is composed of statistical data provided by the National Bureau of Statistics of the Republic of Moldova, as well as those provided by the European Union statistics (EUROSTAT), for the European Community Member States. The findings demonstrate the existence of a huge gap between the level of employment in the Republic of Moldova and the EU Member States. The informal character of employment in agriculture predominates in the Republic of Moldova, caused mainly by the lack of job stability.

Key words: workforce, employment, agriculture, occupational indicators, Republic of Moldova, European Union.

JEL Classification: J43; J82.

1. Introduction

The Republic of Moldova, for a long time considered an agrarian country, faces major employment problems in rural areas. The population employed in agriculture has been and remains the largest in the Republic of Moldova. Agricultural overpopulation is also a major problem of Romania (Chivu et al., 2002). At the same time, agriculture also acts as an important generator of employment in rural areas, especially in developing countries, where the population living in rural areas as a share of the total population is sizeable (Constantin et al., 2021). However, it should also be noted that agriculture has fewer opportunities for job creation in the Republic of Moldova compared to other sectors, as most workers in this sector are self-employed (Bîrcă et al., 2023).

The new changes in the agricultural sector are reshaping the content of occupations in agriculture and related sectors. The new technologies being implemented in agriculture are creating certain discrepancies between labor supply and demand in terms of quality. Implementing new technologies in agriculture requires training and capacity building among agricultural workers. As farmers learn to operate and maintain modern equipment, they acquire valuable competences that increase employability and allow adaptation to changing farming practices.

Also, the rural areas, which are deemed not attractive to the population, especially young people, have led to the depopulation of rural settlements, with a clear shortage of labor in recent years. The trends of rural labor migration to urban areas, as well as abroad, create even greater

mismatches between labor supply and demand. In addition, the seasonal nature of agricultural work, by providing a guaranteed income throughout the calendar year, further alienates the workforce from this vital sector for Moldova. Self-employed and unpaid family workers are the most common forms of employment in the Republic of Moldova. Most of the time, these categories of labor do not have the necessary qualifications to carry out agricultural activities, which is why they suffer in terms of agricultural productivity. In this context, analyzing the correlation between employment and agricultural efficiency, some researchers have found that agricultural incomes are lower on small farms (Wąsowicz, 2013). For self-employed and unpaid family workers, agricultural employment in the Republic of Moldova has been a source of subsistence income in the absence of other employment alternatives in rural areas. The increasingly visible climate change in recent years has also had a major impact on agricultural production, causing a large proportion of the employed population to give up agricultural activities.

The purpose of the research is to analyze the employment indicators in the agricultural sector in the Republic of Moldova and to compare them with those of the EU Member States, in order to find both similarities and discrepancies in the context of accession to the European Community.

2. Literature review

Employment in rural areas, including agriculture, has been of concern to a great number of researchers, often correlated with economic efficiency. Over-employment in agriculture actually hinders labor productivity growth in this sector. According to Flejterski et al. (2012), excessive labor resources in agriculture discourage any effort to modernize the agricultural production process. Agricultural labor presents some specific characteristics compared to other fields of activity, among the most important being: seasonal agricultural activities, family members involved in agricultural activities, the high share of elderly population and women, the great variety in terms of applied technologies, the climate influence on production performance, etc., In this context, Ciutacu, Chivu & Andrei (2015) argue that the economic and institutional mechanisms in Romania have often been designed to the detriment of agricultural production, claiming that subsistence agriculture would be the sustainable way and channeling the added value to other sectors.

Greenville et al. (2019) argue that general trends of improving agricultural productivity and a growing total population with increasing average incomes will create both push and pull factors on agricultural employment. At the same time, the authors argue that the productivity "boost" will lead to a reduction in the agricultural labor force, as fewer workers are needed to achieve a level of output.

In addition to agricultural activities, considered as the main occupation of the rural population, agricultural workers may also engage in other non-agricultural activities in rural areas. According to Anang et al. (2020), off-farm employment is any activity undertaken by a farmer or farm household outside agriculture for an additional source of income. Since the early 1990s, the importance of rural non-farm employment in developing countries has been increasingly recognized (Jonasson & Helfand, 2010). In particular, in developing countries, non-farm employment plays an increasingly important role in sustainable rural and agricultural development (Ma, et al., 2024).

At the same time, non-farm employment in the rural nonagricultural sector may negatively affect the loss of agricultural technical knowledge (Guo et al., 2023). When workers with skills in advanced agricultural technologies move to nonagricultural areas, there are fewer opportunities to transfer their work experience. Agricultural producers with low-quality labor encounter difficulties in fully valorizing the potential of land, which affects the growth of agricultural output per unit area (Giua et al., 2022).

3. Research methodology

In order to achieve the research purpose, several indicators reflecting employment in the agricultural sector in the Republic of Moldova and the European Union are analyzed. Thus, several employment indicators are calculated in the agricultural sector in rural areas.

The database for the analysis of the employment indicators is made up of statistical data extracted from the website www.statistica.md., in the case of the Republic of Moldova, and from the website www.eurostat.ue., in the case of the European Union Member States. The temporal dimension of the employment indicators analyzed covers the period of the last five years in order to highlight the latest trends in the field.

4. Research results

The employment research in the agricultural sector in the Republic of Moldova shows that it remains at a very high level in the structure of occupations by sectors of the national economy. As agricultural employment is the highest among all sectors of the national economy, the Republic of Moldova cannot be considered as a competitive economy, as the value added created is rather low compared to other sectors.

The results presented in Table 1 demonstrate the high level of employment in agriculture in the Republic of Moldova.

Table 1. Employment in the agricultural sector of the Republic of Moldova

Years	Total employed population, Thousand persons	People employed in agriculture, Thousand persons	Share of population employed in agriculture in total employed population, %
2019	872,4	182,8	21,0
2020	834,2	175,9	21,1
2021	843,4	181,2	21,5
2022	862,3	179,3	20,8
2023	886,9	185,3	20,9
2024	853,9	154,6	18,1

Source: Elaborated by the author based on data from the National Bureau of Statistics.

As shown in Table 1, more than 1/5 of the employed population in the Republic of Moldova, excluding 2024, is engaged in the agricultural sector. The variability of the share of the population employed in agriculture is due to the disproportionate evolution of the employed population in the national economy, with significant deviations from year to year. We also see a clear decrease in the share of the population employed in agriculture in 2024 (-2.8 p.p.) compared to the previous year. If during 2019-2023, the population employed in agriculture was relatively stable, then in 2024 we see a contraction of more than 30 thousand persons employed, representing almost 1/6 of the population employed in agriculture in 2023. Even under these conditions, the population employed in agriculture is much higher compared to the EU Member States (Table 2).

Table 2. Employment in agriculture in EU Member States

EU Member States	2019			2024		
	Total employed population, Thousand persons	People employed in agriculture, Thousand persons	Share of population employed in agriculture in total	Total employed population, Thousand persons	People employed in agriculture, Thousand persons	Share of population employed in agriculture in total

			employed population, %			employed population, %
EU	194,795.4	7,871.6	4,0	200,749.9	6,370.0	3,2
Belgium	4,770.7	40.5	0,8	4,981.1	45.0	0,9
Bulgaria	2,946.0	189.4	6,4	2,820.8	134.1	4,8
Czech Republic	5,151.0	134.9	2,6	5,010.4	138.6	2,8
Denmark	2,779.1	56.5	2,0	2,920.2	40.5	1,4
Germany	41,065.1	463.6	1,1	40,923.6	420.8	1,0
Estonia	626.0	20.8	3,3	653.9	20.6	3,2
Ireland	2,238.5	80.7	3,6	2,636.3	77.8	3,0
Greece	3,824.6	419.4	11,0	4,145.9	429.4	10,4
Spain	19,567.9	781.6	4,0	21,300.1	727.5	3,4
France	26,710.9	638.1	2,4	28,363.6	642.3	2,3
Croatia	1,561.4	85.4	5,5	1,652.9	70.4	4,3
Italy	22,465.4	832.0	3,7	23,150.0	763.2	3,3
Cyprus	411.4	8.9	2,2	470.6	9.2	2,0
Latvia	870.3	63.9	7,3	824.6	57.3	6,9
Lithuania	1,324.3	82.7	6,2	1,384.7	66.4	4,8
Luxembourg	287.3	1.8	0,6	320.1	2.5	0,8
Hungary	4,419.2	206.5	4,7	4,573.8	190.1	4,2
Malta	247.0	2.4	1,0	312.7	2.3	0,7
Netherlands	8,689.2	154.5	1,8	9,412.9	155.3	1,6
Austria	4,280.2	142.2	3,3	4,395.1	112.1	2,6
Poland	16,549.3	1,448.8	8,8	16,771.3	1,069.2	6,4
Portugal	4,664.0	158.9	3,4	4,882.2	124.7	2,6
Romania	8,407.9	1,602.2	19,1	7,771.4	844.8	10,9
Slovenia	969.7	35.8	3,7	980.4	30.6	3,1
Slovakia	2,543.8	70.8	2,8	2,562.6	57.3	2,2
Finland	2,487.0	83.4	3,4	2,504.4	71.8	2,9
Sweden	4,938.5	65.7	1,3	5,024.0	66.2	1,3

Source: Elaborated by author based on EUROSTAT data.

From Table 2, we see some variations in employment across EU Member States. As the employed population at the EU Member State level increased by almost 6 million people between 2019 and 2024, the population employed in agriculture decreased by about 1.5 million people over the same period. For the most part, this is due to structural changes taking place in the agricultural sector in the EU, including the implementation of smart agriculture. Respectively, the share of the population employed in agriculture in the EU Member States has decreased from 4.0% to 3.2%.

In the year 2024, the population employed in the agricultural sector in Belgium was more than 4 times smaller than in the Republic of Moldova, constituting only 0.9% of the total employed population. In the situation where the territorial area of Belgium is close to that of the Republic of Moldova, the share of the population employed in agriculture is much lower, even though in the last 5 years, it increased by 4.5 thousand people.

A relatively high share of the population employed in agriculture is characteristic of the former socialist countries, now members of the EU, with the exception of Greece. It should be noted that the population employed in agriculture in Romania has almost halved over the period analyzed. If in 2019, the share of the population employed in agriculture was 19.1% of the total employed population (the highest of all EU Member States), then in 2024, it has reduced to 10.9%, registering the largest decrease of all EU Member States and being close to that registered in Greece. Similarly, we note that the population employed in agriculture in the Republic of Moldova is comparable to that of Bulgaria, a country whose territorial area is more than 3.5 times larger. The situation is also very similar in relation to Portugal. It can also be seen that the

share of the population employed in agriculture has been on a downward trend over the period under analysis in most EU Member States, with the exception of the Czech Republic and France. While in the Czech Republic the population employed in agriculture increased by more than 4 thousand persons, despite the decrease of the employed population by more than 140 thousand persons, in France it increased by more than 4 thousand persons, as a result of the increase of the employed population by more than 1.6 million persons, in the period 2019-2024.

Another important aspect of the research was the analysis of the structure of the population employed in agriculture, which differs from other sectors of the national economy. Usually, employees make up the largest share of the total employed population. In the case of agriculture, the Republic of Moldova has a relatively high share of self-employed workers and unpaid family workers, which proves the informal nature of the work performed. Table 3 calculates the structure of the employed population by labor force categories in the agricultural sector in the Republic of Moldova in the period 201-2024.

Table 3. Agricultural sector labor force structure in the Republic of Moldova

Years	People employed in agriculture, Thousand persons	Employees, %	Self-employed persons, %	Unpaid family workers, %	Owners, %
2019	182,8	35,8	44,2	19,5	0,5
2020	175,9	36,6	42,9	20,2	0,3
2021	181,2	37,4	41,7	20,8	0,1
2022	179,3	40,7	39,6	19,3	0,4
2023	185,3	39,0	40,9	19,5	0,6
2024	154,6	37,9	39,5	22,3	0,3

Source: Elaborated by the author based on data from the National Bureau of Statistics.

The calculations show the informal nature of work in the agrarian sector. Except for 2022, the share of self-employed workers in the total employed population was higher than that of employees. Agriculture is the sector with the highest share of own-account workers. The seasonal nature of work in agriculture largely leads to the involvement of rural people in self-employment, without realizing the economic and social consequences for them. Unpaid family workers also constitute around 1/5 of the population employed in agriculture. In most cases, unpaid family workers are not adequately qualified for agricultural work. They are performed more intuitively, which is reflected in the performance of the agricultural sector. Similarly, the lack of financial motivation and the unfavorable climatic conditions for agriculture in recent years have demotivated this category of people. For the most part, unpaid family workers work to ensure minimum subsistence. In the event of new employment opportunities in rural areas, they will be the first to give up agricultural work. The low state subsidization of agriculture is also another reason for giving up agricultural activities.

For the EU Member States, the share of employees in the total population employed in agriculture is very different from one country to another (Figure 1).

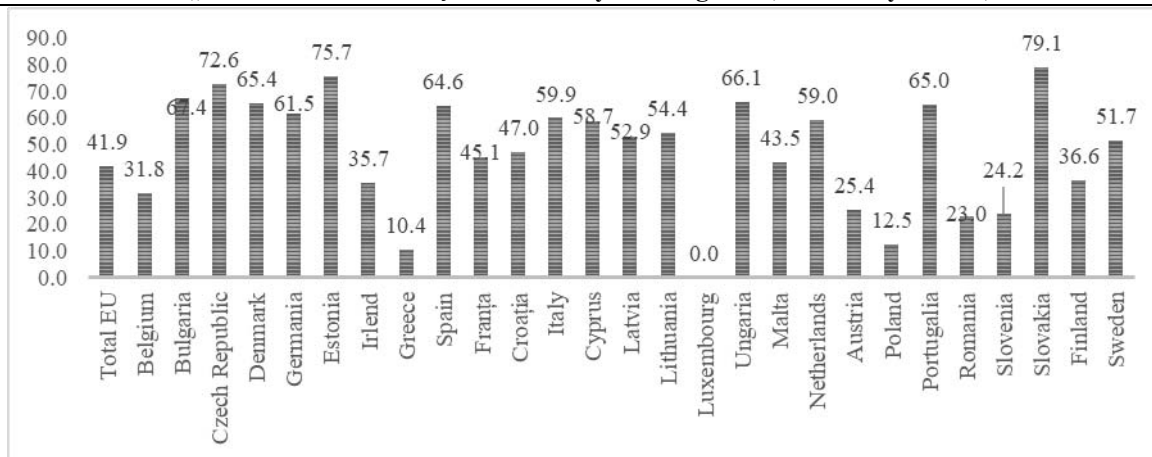


Figure 1. Share of employees in total population employed in agriculture in EU Member States in 2024

Source: Elaborated by author based on EUROSTAT data.

At the EU Member State level, the share of employees in the total population employed in agriculture was 41.9% in 2024, 4.0 p.p. higher than in the Republic of Moldova. At the same time, the share of employees in the total population employed in agriculture was twice as high in Estonia and Slovakia compared to the Republic of Moldova. There are also EU member states where the share of employees in the total population employed in agriculture is below 15% (Greece and Poland). At the same time, the share of self-employed workers was the highest in these states in 2024 (Figure 2).

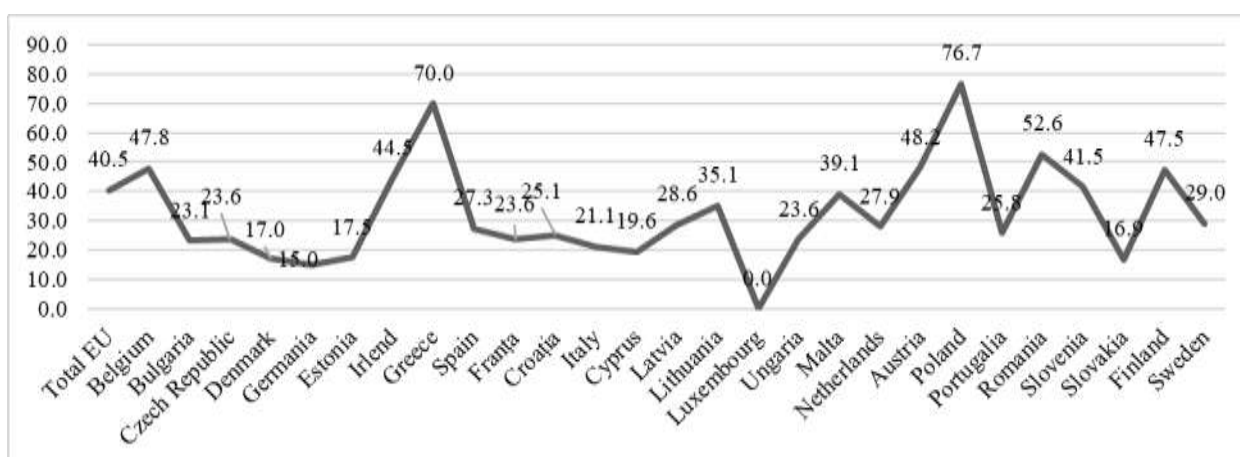


Figure 2. Share of self-employed workers in the total population employed in agriculture in the EU Member States in 2024

Source: Elaborated by author based on EUROSTAT data.

Therefore, the structure of agricultural employment in the EU Member States depends on the form of organization, the policies promoted in the field and the level of state support for agricultural producers. The high share of own-account workers in agriculture in some EU Member States can also be explained by their financial motivation, expressed through state subsidies, which is less the case in Moldova.

5. Conclusions

The employment situation is on everyone's agenda. Every country is concerned with developing appropriate and effective policies to increase employment. The Republic of Moldova has the highest level of employment in the agricultural sector in Europe. The lack of employment opportunities in rural areas and the lack of professional skills for other areas of activity involuntarily "push" the labor force towards agricultural activities, which leads to the maintenance of high employment in agriculture.

Research results show that about 1/5 of the employed population in the Republic of Moldova is engaged in agricultural works. Even though the Republic of Moldova is considered an agrarian country by historical tradition, this makes it less competitive compared to other countries where agriculture has been a major sector over the years. The enormous gap in agricultural employment in the Republic of Moldova compared to EU Member States is due to the lack of infrastructure and high-performance technologies in this sector. To a large extent, this accounts for the difference in the performance of the agricultural sector in the Republic of Moldova compared to the EU Member States. At present, the level of employment in the agricultural sector in the Republic of Moldova is twice as high as in Romania, which in 2024 had the highest share of employment among the EU Member States (10.9%). In contrast to Belgium, the share of the population employed in the agricultural sector in the Republic of Moldova is more than 20 times higher, when the territorial areas are almost equal.

Also, in the Republic of Moldova there is a relatively high share of self-employed workers in the total population employed in the agricultural sector. Most of the time, this form of employment is informal in the Republic of Moldova, making it more difficult to monitor and bring it into a formal framework.

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