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DEVELOPMENT OF THE AGRICULTURAL WORKFORCE IN ROMANIA AND HUNGARY, ESPECIALLY IN THE PERIOD AFTER THE ACCESSION TO THE EU

Review
Article

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Abstract

Agriculture is a vital activity that plays a key role in the food security of the population, has an impact on regional and local ecosystems and is a tool for the economic development of every country. Accession to the European Union had a serious impact on the agricultural performance of the accessing countries, and had an effect on the fluctuation of agricultural employees. The proportion of the population living in rural areas is also declining in Romania, Hungary and the European Union, as the primary source of subsistence in rural areas is agriculture, which is a less attractive alternative to the more competitive sectors provided by urban areas. As a result of the above mentioned processes, the structure of agricultural workforce is constantly changing and deteriorating, and for the young generation, agriculture and rural life are not a viable alternative for the future. An aging tendency can be observed for the agricultural workforce. The aim of the presented study is to examine and present the situation of the agricultural workforce in Romania and Hungary, the transformation of its structure in recent years, especially in the years following the EU accession, and to draw some important conclusions, which include the most important past trends and also provide future perspectives and suggestions in relation to the topic under study.

INTRODUCTION

Rural areas have always played a major role in human history, both in terms of food production and employment. However, economic, income and social inequalities between rural and urban areas have become stronger during the recent years. The primary source of subsistence of the rural population is agriculture. It can be established that in recent years agriculture cannot be called a competitive alternative for the young rural population attracted to the urban lifestyle (Fróna & Kómvés, 2019). Agriculture is a vital activity that plays a key role in the food security and employment of the population, and has an impact on regional and local ecosystems and is a tool for the economic development of every country. One of the most essential resources of agricultural production is human capital. If the demand for labour in agriculture is taken into account, it can be stated that agriculture is one of the sectors where the demand for human capital is high, because in livestock farming, but also in crop production and vegetable production, human resources are one of the basic, important input factors for production (Steriu & Otiman, 2013).

Adequate education and qualification of human capital is essential for competitive and efficient agricultural production. In Hungary, the level of qualification of those employed in the agricultural sector is still low, despite a significant improvement during the last decade and a half. Agricultural employment is influenced by numerous factors, one of the most important of which is the development of income. Higher incomes can be achieved in other sectors of the national economy, which results in a migration of employment from agriculture towards other sectors. In the case of joint ventures, the spread of large-scale technology results in significant savings in terms of workforce, which is also accompanied by the improvement of efficiency. In the case of individual farms, improvement of the level of technology is less characteristic, which can be traced back to old routines, respect for traditions, lower profitability and the aging of the involved workforce. This is pointed out by the study of Popp, Potori, Udovecz & Csikai (2009), which states that innovation is one of the conditions for the adaptability of farmers. In agriculture, the fact that younger family members seek employment outside the agricultural sector contributes largely to the decline of the number of farms. Retention of the agricultural workforce is significantly influenced by age and qualification. However, it is important to emphasize that the lack of a suitably qualified and knowledgeable workforce is a serious obstacle to the introduction of technological innovations and increasing the efficiency of production activities in

various parts of the world (Dajnoki & Kun, 2016; Herman, Körösparti & Kómvés, 2018; Campos, Jaklic & Juvancic, 2010).

The aim of the presented study is to examine the situation of the agricultural workforce in Romania and Hungary in the last 10 years, especially in the years following the EU accession.

LITERATURE REVIEW

Well-motivated employees who possess useful knowledge and skills can be considered one of the most important resources of business economics (Magda, Hajós & Dolmány, 1998). In most EU Member States, the proportion of people employed in agriculture has declined over the last 50 years, and in terms of the age structure of those working in the agricultural sector, it can be stated that there is an aging workforce, which is also a challenge for the supply of agricultural workers in the future. In countries with a developed agriculture, the decreasing number of employees working in the sector can be detected from year to year (Harangi-Rákos & Szabó, 2012). In recent years, one of the problems of agricultural enterprises in the EU-28 is the lack of employees with the right skills and knowledge. The proportion of rural population in Romania and Hungary has been steadily declining in recent years; however, agriculture is the primary source of subsistence for the rural population (Hatos, 2019; Harangi-Rákos, 2013).

One of the reasons for the decline of rural population is that agricultural wages are not competitive, meaning that working in urban areas or working abroad are better income alternatives for those living in rural areas. One of the consequences of the above process is that less and less young people take up and carry out agricultural work, which means that there is an aging trend among agricultural employees and entrepreneurs. In the case of Romania, one of the problems is the fluctuation of workforce and the lack of skilled employees (Samochiş & Glogoveţan, 2012; Popescu, 2009).

SCIENTIFIC CONCEPT AND METHODS

In the scope of processing the scientific literature on the topic, domestic and foreign research, reports and scientific publications were examined that are closely related to the field of research. In the course of the analysis, the aim was to present the development of the agricultural workforce in Romania and Hungary following the accession to the European Union. For the collection of numerical data, the databases of EUROSTAT, WORLD BANK, FAOSTAT, KSH, INS and

ERDELYSTAT were used. Furthermore, the surveys and analyses of research institutes and the Statistical Office of Romania and Hungary were studied and processed.

AGRICULTURAL EMPLOYMENT IN THE EU

Agriculture plays a significant role in terms of employment within the European Union, because there were 9.7 million employees working in this sector in 2016, representing 4% of total employment in the EU-28 (Eurostat, 2018). The proportion of people working in agriculture is higher in the case of certain countries, 23% of employees in Romania work in the primary sector, this proportion is 17.5% in Bulgaria, 10.7% in Greece and 10% in Poland (Eurostat, 2018) and only 5.7% in Hungary. In Romania the growth of the unemployment caused the growth of the agricultural employment after 1989 (Dajnoki, Sipos, Héder-Rima & Kómvés, 2020). The number of employees in the agricultural sector can depend on the farming structure of the countries (Fenyves, Pető, Szenderák & Harangi-Rákos, 2020), but during the analyses it must be taken into consideration that the most of the private farms in Hungary only produce different products in order to cover the consumption needs of the owners (Harangi-Rákos, 2013). Because of this circumstance most of the profit of the agricultural production is realised by the agricultural companies (Szabó & Harangi-Rákos, 2012). 11% of agricultural jobs were created between 1990 and 2005, while the outflows of agricultural workforce increased by 3% during this period (Schuh, 2019). Countries that joined the European Union after 2004 suffered greater losses in terms of agricultural employees, since the proportion of agricultural workers declined by 1.7 million during that period (Schuh, 2019). In fact, the primary sector faces a challenge that one of the foundations of economic growth is that workforce flows from agriculture to more competitive, higher-productivity areas, such as the secondary sector and the tertiary sector (Fróna & Kómvés, 2019).

With the development of the economy of European Union, there has been a general tendency of a decrease in the proportion of people working in agriculture and an increase in the proportion of employees in other sectors. Mobility of workforce is largely affected by the structural change in the sector. This structural change is influenced by a number of factors, including technological development, accession to the European Union, income inequalities across industries, education and age, and gender inequalities (Schuh, 2019). Within the EU-28, the majority of jobs were created in the servicing sector in 2018, a consequence of which

was a further increase in the share of services in total employment, i.e. from 70.1% in 2008 to 74% in 2018. In the case of construction industry, the increase in terms of the above ratio was 1.3% compared to the previous year. The number of people employed in construction also increased compared to 2017 by 337,000, or 2% (Schuh, 2019; Reiff, Surmanová, Balcerzak, & Pietrzak, 2016).

If agriculture is examined on the basis of the annual work unit, it can be said that it has been steadily declining in the entire area of the European Union during the recent decades. The total utilized labour was 13.1 million AWU in 2003, which declined to 9.1 million by 2018, a 30% decrease over the last 15 years (European Commission, 2019). Romania joined the European Union in 2007, but a declining trend between 2007 and 2013 can also be observed in the case of Romania. The share of agriculture in total employment decreased from 5.4% in 2008 to 4.3% in 2018. In fact, the employment of agriculture within total employment in the EU-28 fell by 2.3 million annual work units between 2007 and 2013, a decline of almost 20% over this period. Based on *Figure 1*, it can be said that in the case of almost every country, there is a decreasing trend in terms of agricultural workforce. The case of Hungary (389,680 AWU - 400,020 AWU) and Malta (4,170 AWU - 4,380 AWU) is an exception, as in the analysed period the proportion has somewhat increased in both countries (European Commission, 2019).

Within the European Union, Poland (19.5%) and Romania (16.5%) had the highest proportions of utilized labour in 2010. By 2018, this ratio was 18.4% in Poland, 18.3% in Romania and 4.4% in Hungary. However, for most EU countries, agricultural workers are employed full-time; this proportion is 36% for the EU-28 and 7% for Romania, one of the lowest within the EU-28 (Hatos, 2019).

AGRICULTURAL EMPLOYMENT IN ROMANIA AND HUNGARY

In Romania and Hungary, agriculture has always played a key role within national economy. Following the accession to the European Union, neither Romania nor Hungary was able to compete with the old member states due to the following factors: low level of organization, equipment, outdated technology, lack of appropriate skills of agricultural workers, fragmented property structure (Samochiș & Glogovețan, 2012; Havlik, 2015).

In Romania, the primary source of subsistence for the rural population is agriculture (INS, 2019). Regarding the survey of the agricultural workforce, it can be stated that the proportion of people working in agriculture is high in Romania, as according to the 2018 World Bank data, the

proportion of people working in agriculture in Romania was 23%, while in the European Union it was only 3%. At the same time, a large part of the Romanian population is present as permanent or seasonal agricultural labour in other EU countries (Germany, France, Italy, Denmark, Spain). From among the Member States of the European Union, Romania has the highest proportion of people working in agriculture, as this value – according to the above mentioned data – was 23% in 2018, compared with 4.31% in France, 3% in Germany, 4% in Spain and 10% in Poland (Vasile, 2014; Macours & Swinnen 2005).

In Hungary, the number of active employees of agriculture approached 1,000,000 in 1980; this number decreased to 700,000 by 1990, and in 2019 only 211,000 people worked in the agricultural sector (Fróna & Kómvés, 2019; KSH, 2020). In Romania, after the change of regime, the proportion of people working in agriculture increased until the 2000s and then decreased after 2000. In Romania, at beginning of 1990s 3 442 000 people worked in agriculture, forestry and fisheries, in 2011 2 440 000 people and in 2018 1 759 500 people (INS, 2019). This decreasing trend can be observed not only in the case of Hungary and Romania, but also in the entire EU (Hatos, 2019). *Figure 2* illustrates how the share of people working in agriculture in Romania, Hungary and the EU-28 developed between 2007 and 2018. In the case of Romania and Hungary as well, the proportion of people working in agriculture exceeds the EU-28 average. However, it can be seen that Romania has the highest rate in the analysed period; it can be partly explained by the fact that in most cases agricultural production serves self-sufficiency, as a significant part of the goods are produced for own consumption (Tudor, 2015).

In the years following the economic crisis, as a result of the crisis, the proportion of people working in agriculture started to increase in Romania. In the case of Romania, 28% of the working age population worked in the agricultural sector in 2008, 29% in 2009 and 31% in 2010 (Vasile, 2014). One of the reasons behind this is the fact that unemployment has increased as a result of the economic crisis, and the employment rate has also decreased in the secondary and tertiary sectors, which means that in 2008 32% of the working age population worked in the secondary sector; the rate was 30% in 2009 and further or decreased to 28% in 2010 (World Bank, 2018; INS, 2019). In Hungary, the share of those working in the tertiary sector shows a decreasing trend in the last nine years, i.e. in 2010 70% of the employed worked in the servicing sector, in 2015 65%, in 2019 63%, while in 2010 26% of the employed people worked in industry, in 2015 30%, in 2019 33% (World Bank, 2018). In Hungary, 4% of employees in 2010

worked in agriculture, 5% in 2015 and 4.7% in 2019 (World Bank, 2018). Thus, in the case of Hungary, in terms of the proportion of people working in agriculture in the period between 2007 and 2018, it can be stated that there was no significant change; i.e. the proportion ranged from 4% to 5%. In the case of Romania, a declining trend in the share of people working in agriculture can be identified after 2010, which may be due to multiple factors. The first such factor is that Romanian population has been steadily decreasing since the 1990s (from 23 million to below 20 million), but if 2007 is taken as a basis of reference, there is still a noticeable decline, as Romanian population was 20,882,982 in 2007, and in 2018 it was 19,473,936 (World Bank, 2018).

However, based on the 2019 data of the Romanian Statistical Office, it can be stated that in the period of 2013-2018 the proportion of people working in the secondary sector increased. In 2013 - 2 410 000 people, in 2015 - 2 515 000 people, in 2016 - 2 640 100 people, in 2017 - 2 658 000 people and in 2018 - 2 630 000 people worked in the agricultural sector (INS, 2019). In the case of Hungary, about 220,000 people worked in agriculture, forestry and fishing in 2017, and there was an increase in the number of employees in 2011 and 2012, and then increased again after the decline in 2013. At the same time, between 2010 and 2017, the 27% growth rate of agricultural employment was the highest; in the case of other sectors, employment in industry increased by 21% and in the service sector by 17% (Fróna & Kómvés, 2019).

Romania joined the EU in 2007, providing the citizens of Romania the opportunity to work in other EU Member States due to the free movement of workers. Many people in Romania, and especially in Romanian agriculture, used this opportunity, because the wages and incomes available in agriculture were not and currently are not competitive with the wages and incomes of other EU Member States. In addition to accession, the employment of skilled workers in other areas, such as the tertiary sector, also contributed to the decline in the proportion of people working in agriculture (Vasile, 2014). In the case of the latter, the share of employees increased significantly in the period of 2007-2018, as while in 2007 39% of the population took up work in the tertiary sector, and in 2018 47% of the population did so. Examining the proportion of people working in agriculture in the EU-28 and Romania during the analysed period, it can be stated that there was a decreasing trend, as in Romania 30% of the population in 2007 and 23% in 2008 took up work in agriculture and for the EU-28 this rate was 4% in 2007 and 3% in 2018 (INS, 2018; World Bank, 2018).

Despite the decline, the values of Romania in this area remain high compared to the European Union.

According to INS (2018) and Erdelystat (2019) analyses, 15.5% of the employees of the country worked as self-employed and 7.2% was the proportion of assisting family members (INS, 2018). Two-thirds of the self-employed people were in the agricultural sector. However, the vast majority of the self-employed do not have a registered, institutionalized status (no registered business), they mostly seek self-preservation, they sell their products in an unorganized way, while their market relations are weak, and their vulnerability and poverty risk are high. On the other hand, more than 90% of the self-employed in Romania do not have any employees, which is the highest rate in the EU. Regarding the methodology used in the European Union, self-employed persons working in agriculture are categorized as employed (Erdelystat, 2019).

In the case of Hungary, in 2017 the number of joint ventures in agriculture, forestry and fishing was 13,000, and the number of independent enterprises was 473,000 (Fróna & Kőmíves, 2019). According to 2012 data, in Romania 88.7% of agricultural workers are not employed and 30.6% work part-time, in contrast, in Hungary 71% of agricultural workers are employed and 93.1% work full-time. This supports the fact that in many cases in Romania agriculture is not considered a main occupation but as an additional source of income, i.e. as a secondary occupation. One of the characteristics of agricultural work is seasonality and within the EU-28 countries there is a tendency for workers to move from developing countries to developed countries for seasonal employment (Vasile, 2014). Recently, a mass migration from rural to urban areas has been observed. In the case of Romania, the majority of young people work in other countries to earn a higher income. As a result, the rural population is declining, there is an aging trend in the rural population and the birth rate is also declining. The above mentioned facts also greatly influence the supply side of the agricultural labour market (Vasile, 2014). *Figure 3 and Figure 4* illustrate how the number of farmers in agriculture in Romania and Hungary developed by age in the years following accession.

In the case of the European Union, it can be stated that the average age of farmers and workers is constantly increasing. For active farmers, the presence of people over 55 is high, which is a cause for concern. According to 2013 data, in the case of Hungary, France, Poland and Italy, 20-40% of young workers (under 35) did not take up work in agriculture but in other sectors, while 5-7% of workers over 54 work in non-agricultural sectors, thus older workers prefer to work in the agricultural sector, however in the case of young people this cannot be stated (Vasile, 2014).

In the case of Hungary and Romania, it can be seen from *figure 3 and figure 4* that the number of

farmers belonging to the older age group is higher than the number of farmers belonging to the younger age group, thus the aging trend is a big problem in both countries during the examined period. In the case of the EU-28, it can be established that 20% of those working in agriculture are under the age of 54. The younger age group is more likely to have been more highly educated than the older age group (over 65) and are more likely to take up work in another sector like the service or secondary sector (Schuh, 2019). In Romania, 26.8% of young people aged 20-3 and living in rural areas are not considered active workers and have not received any vocational training (Hatos, 2019). The age structure of agricultural workers and entrepreneurs is also a serious problem in Romania, with 41% of Romanian farmers over the age of 65 and only 5% under the age of 35 (Hatos, 2019). In Hungary, 31% of sole farmers were older than 65 years, and only 6% were under 35 years of age in 2016 (Fróna & Kőmíves, 2019). The gradual aging of agricultural workers is a process that is also a problem in Hungary and Romania, in that the older age group is less open to the application of new technology and innovation. More than 70% of EU farmers have only practical experience, compared to 97.5% in Romania, 96.6% in Bulgaria, 85.5% in Hungary and 31.4% in Germany (Unguru, 2017). *Figure 5* illustrates how the share of those receiving agricultural education in Romania developed between 2007 and 2018.

Figure 5 also illustrates that the proportion of people with agricultural higher education in Romania shows a declining trend over the analysed period. One of the reasons for this declining trend may be that the average agricultural wage lags behind the average of the national economy, thus it is not competitive with other sectors; therefore, it is not attractive to young people. In Romania, more than 25,000 students received vocational training in agriculture in 2005, and in 2017 the figure dropped to 10,300. For young people in Romania, the current agricultural training and the agricultural career are less attractive, one of the consequences of which is that the young age group is not involved in agricultural production and is not considered a potential agricultural worker (Unguru, 2017). In the case of Hungary, it can be stated that in proportion to the OECD average, more people graduate in the field of agriculture, but due to the low willingness to further education and the aging structure of agricultural workers, there are not enough highly qualified agricultural professionals (Fróna & Kőmíves, 2019). In the case of the examination of the Hungarian labour market, it can be stated that the labour market appreciates the acquired agricultural expertise and diplomas, but the same trend is characteristic as in Romania, i.e. the income provided by Hungarian agriculture

cannot approach the income of Western (Craciun, Rovinar, Genig, Milin & Rujescu 2019). On the other hand, there is a significant difference in terms of the education in the two countries, namely that dual agricultural education is not included in the education system of Romania, in contrast, Hungary has dual agricultural education (Lupu, 2019).

CONCLUSIONS

Accession to the European Union had a serious impact on the agricultural performance of the accessing countries, and also had an effect on the fluctuation of agricultural workers, and increased the rate of fluctuation. In the case of Romania and Hungary, it can also be stated that traditional agriculture is no longer competitive. For both countries, the efficiency of agricultural output should be improved by increasing capital and expertise. One of the fundamental problems in these countries is the low level of education of the agricultural workforce, the lack of agricultural vocational training, and the disappearance of vocational and technical training in more and more professions. In the case of Romania, it can be seen that the proportion of people working in agriculture is high, but for most workers, the lack of skills is an obstacle to efficient work. Without technological development, expertise and adequate capital allocation, agriculture in Romania and Hungary will not be able to improve international competitiveness. The above analysis raised a number of important issues for the agricultural workforce in Romania and Hungary, i.e. the fundamental problems in both countries are the decrease in the proportion of people working in agriculture and the increase in the proportion of people working in the secondary and tertiary sectors (Vasile, 2014; Rabon & Babucea, 2013). Romania is one of the countries with the highest proportion of people working in agriculture, yet labour productivity is one of the lowest in the European Union, as most farms are self-sufficient and do not produce for commercial purposes. Aspects of the analysis of the agricultural labour force also include education, age structure, and the method of employment of agricultural workers, for which the same problems can be identified for the analysed countries. The most prominent problems are the aging of the agricultural workforce, generational differences, lack of modern technology and modern knowledge. In this regard, it is important that young people who choose agriculture as their future subsistence should be seriously strengthened and encouraged to stay within the sector. Agriculture also faces the challenge of finding out how it can increase the efficiency of production, despite the fact that certain resources have only a limited availability.

In the 21st century, technological development, robotisation and automation will play an important role, thus innovation and knowledge will also play a key role in the case of agriculture as well, which will make it possible to create and apply the concept of a sustainable and viable agriculture which ensures the well-being and subsistence of the rural population and reduces the fluctuation of young workers. At the same time, the above mentioned processes will result in lower value-added jobs being replaced by automation, which means that there will also be an increase in a demand within agriculture for workers with the required skills, abilities and digital knowledge.

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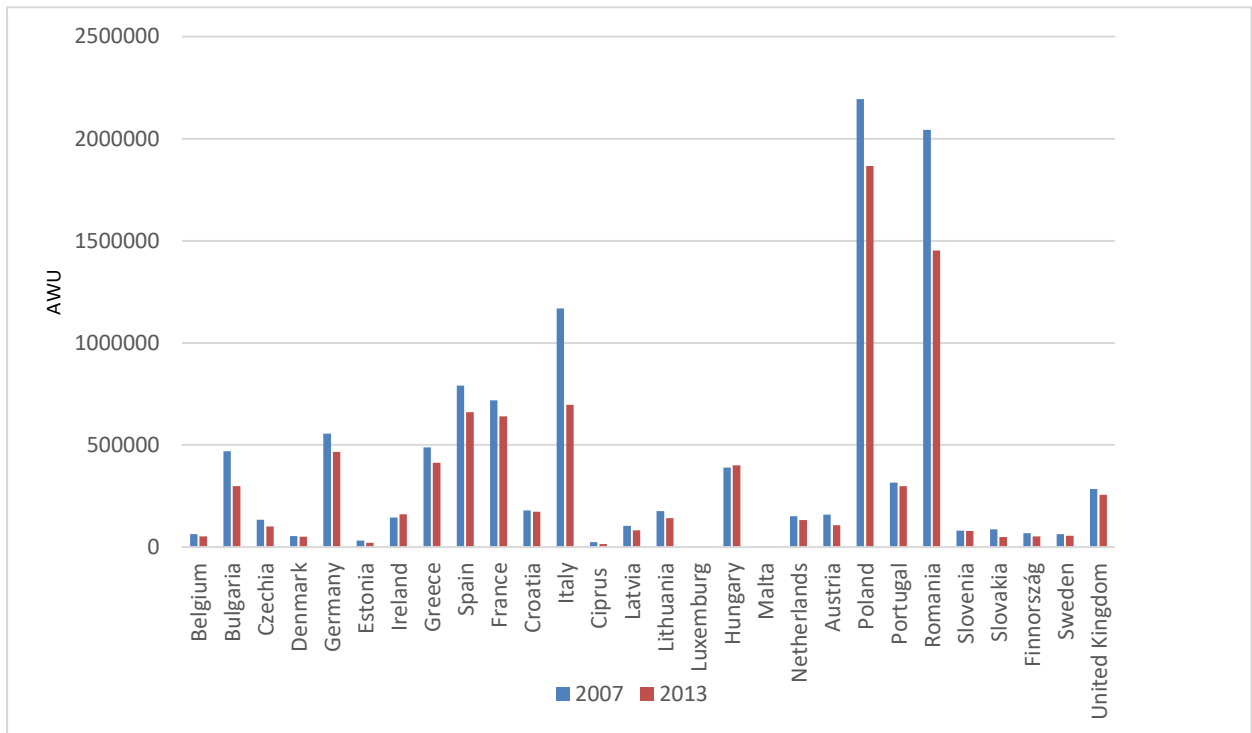


Figure 1
Amount of workforce utilized in the EU-28 Member States (2007, 2013 AWU)
Source: Own editing based on EUROSTAT 2018 data

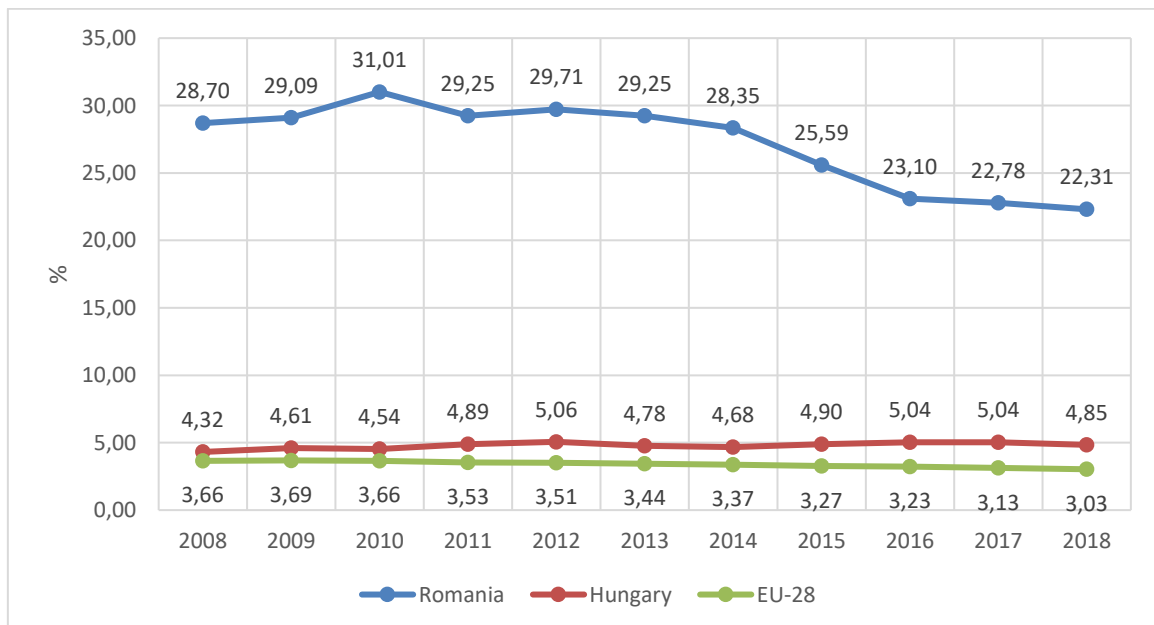


Figure 2
Proportion of people working in agriculture within working age population (2008-2018,%)
Source: Own editing based on World Bank (2018) data

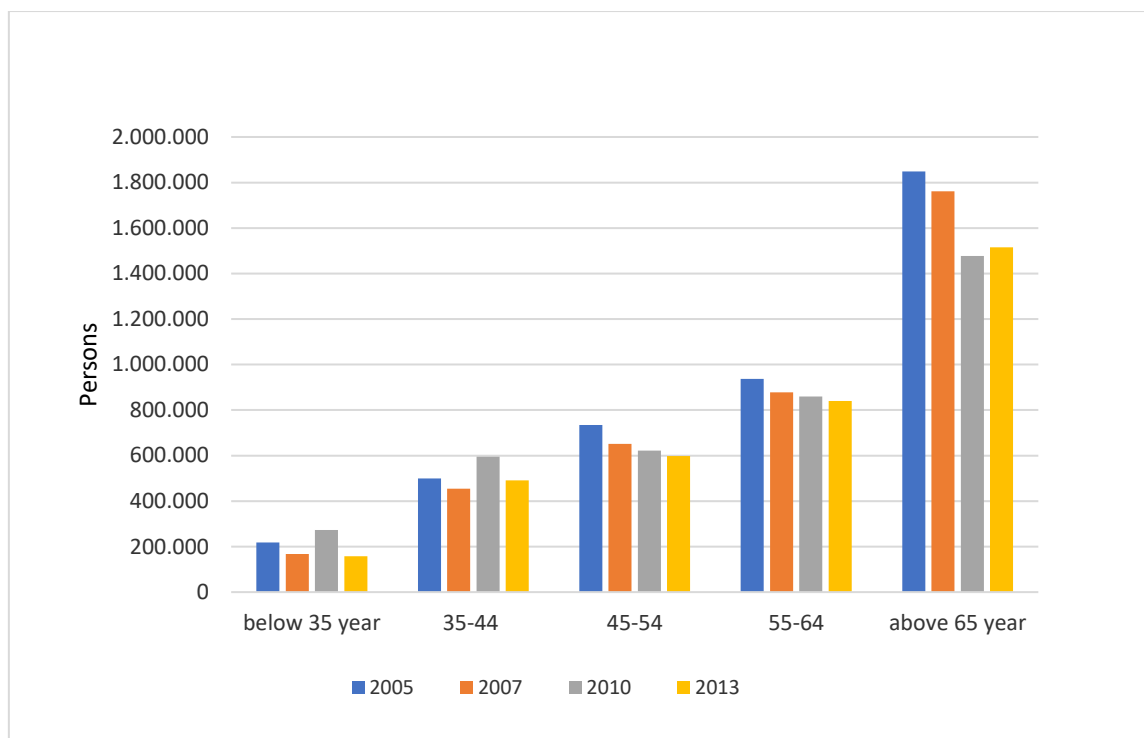


Figure 3
Number of farmers in Romania by age (2005-2013, people)
 Source: Own editing based on EUROSTAT (2019) data

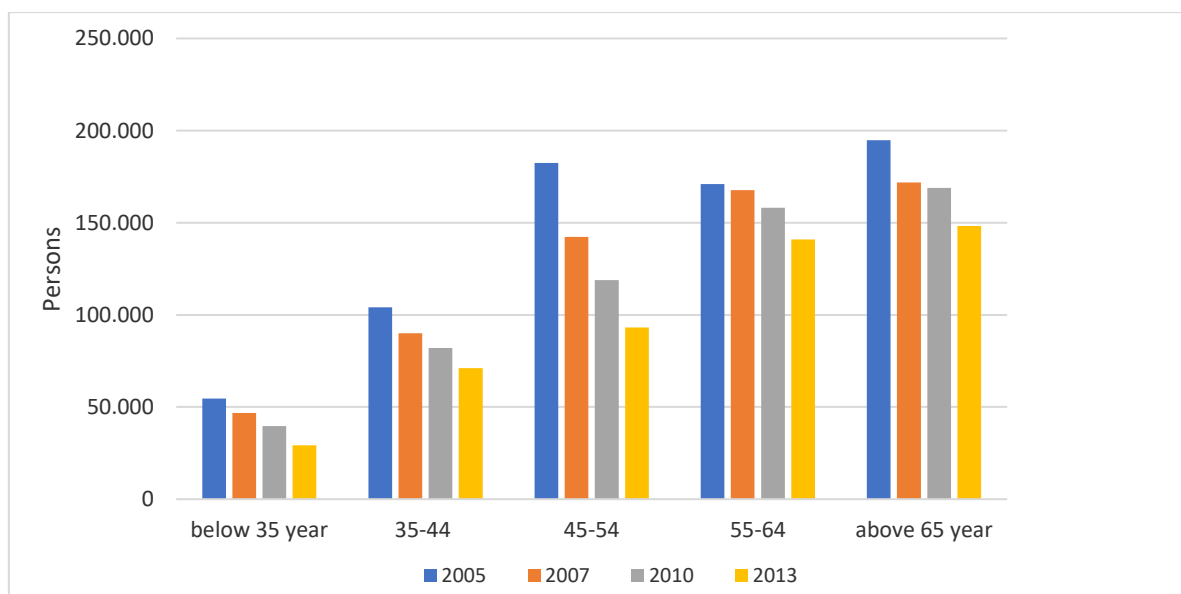


Figure 4
Number of farmers in Hungary by age (2005-2013, people)
 Source: Own editing based on EUROSTAT (2019) data

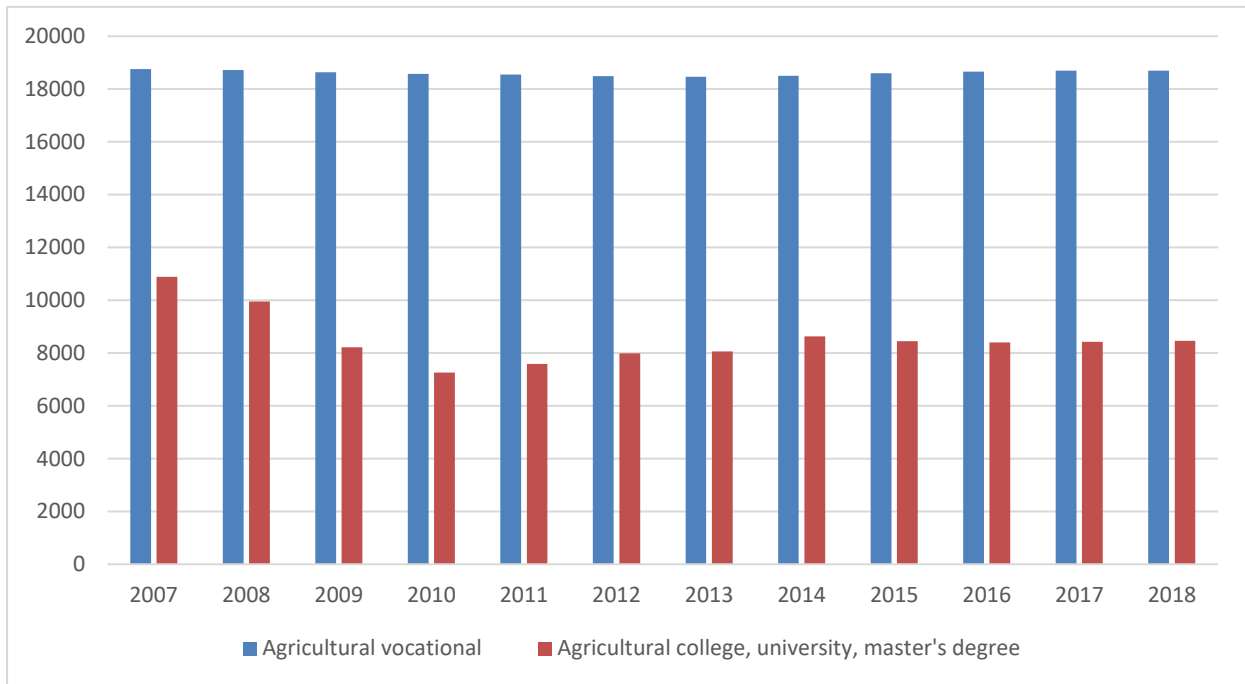


Figure 5
Students who received agricultural education in Romania (2007-2018, students)
Source: Own editing based on INNS (2019) data