

# FARM MANAGERS IN AGRIBUSINESS OF THE EUROPEAN UNION AND THE REPUBLIC OF SERBIA - COMPARATIVE APPROACH<sup>1</sup>

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## **Abstract**

*Managers represent the most important human capital and play a driving role in the efficient development of economic entities and agricultural holdings in rural development. Research in the paper aims to analyze and identify positive and negative trends, similarities and differences in the farm managers structure in the European Union and the Republic of Serbia. Research has confirmed the basic hypotheses. The comparative analysis confirmed that the EU and Serbia share similar characteristics, challenges and problems when it comes to the degree of engagement of professional managers on farms. The involvement of professional managers is directly related to the size and income of the farm. Large farms, due to the volume of operations, to a greater extent hire professional managers in business management. Medium and small farms are faced with numerous challenges in terms of unfavorable age structure, migration, inadequate educational level, gender structure, legal status of employment. This indicates the need for further research in encouraging and giving stronger support to the role of professional management on farms with the aim of sustainable, efficient, effective and profitable business in agribusiness.*

**Key words:** *farm managers, professional management, structure, agribusiness, agricultural holding*

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## Introduction

Business-specific practices and culturally dependent management philosophies indicate that managers are the driving force in the efficient development of economic entities in agribusiness and rural development. That is why the term “human capital” in contemporary management is used more and more often (Nedeljković & all, 2023). The term human capital in management means educational capital, labor managers capital, cultural and behavioral capital, as well as intellectual capital (Yakimova & Streltsova, 2019). According to a large number of authors, managers as a human capital occupy a central place and have a special importance for the development of agribusiness in rural areas (Ognjanović & all, 2023; Vukoje, 2022). In addition to technology, natural resources, state and agrarian policy and legislation in agribusiness, managers directly affect the increase in productivity in agriculture, amongst other things, because it has the ability to adapt to technological, innovative changes and modern challenges (Zepeda, 2001; Fikhtner & Shrediva 2019; Diebolt & Hippe, 2019).

Human resources, land and capital represent the already well-known “trilogy of factors of production in agriculture” according to the theory of economic analysis (Popescu & all, 2021; Schumpeter, 1987). Farm managers have a key role in harmonizing these factors in order to ensure the sustainability and development of farms. Managers of agricultural holdings perform specific roles (interpersonal, informational, operational), functions (planning, organizing, personnel, management, control) and use a range of skills (technical, humane, conceptual) in order to run an efficient, effective and profitable business (Zečević & all, 2023; Zečević & all, 2022). They play a key role in management activities that include business initiation, risk reduction, management and direction of all farm activities.

Also, managers are initiators of change and introduce new ideas and effective solutions with the application of modern scientific and information technologies in business practice (Nedeljković & Tomić, 2023). In addition to the fact that they represent the basic drivers of successful business, the special role of farm managers is in the introduction and application of innovative approaches in the decision-making process (Arnautović & all, 2022; Radović & all, 2019).

Agricultural holding managers are responsible for daily supervision of operations and strategic management (Gardašević & all, 2022). This role entails a diverse range of responsibilities including yield monitoring, financial planning, production sustainability. Their role, apart from production, includes in-

teractions with suppliers, customers and ensuring compliance with agricultural standards and regulations (Carić & all, 2022). For these reasons, an efficient and successful farm manager must possess broad agricultural knowledge, leadership qualities and business skills in managing the complex operations of a modern farm.

In the modern environment of Europe, and more and more often here in Serbia, there is an increasingly present tendency to recognize the role and importance of professional management and the necessity of hiring managers as professional management personnel who represent the main drivers in the development of farms and agricultural production.

In the rural areas of the European Union, and also in Serbia, the population is relatively high, and agricultural production is the main source of income and affects the living standard of the local population (Popescu & all, 2021; Pavlak & Pocztaw, 2020; Erokhin & Tianming, 2021 ). One of the basic problems in the management of agribusiness in the European Union, as well as in Serbia, is the general trend of the decline of professional staff engaged in management activities in agriculture. The negative aspect is caused by the structure of management staff (owners of agricultural holdings are also managers in the largest number of farms), the age structure and the migration of young professional staff to urban areas and abroad looking for better-paid jobs (Georghe & all, 2022). For these reasons, it is evident the necessity of engaging expert, professional managerial staff in management and managerial tasks with the aim of increasing labor productivity, improving the farm structure and ensuring the sustainability, growth and development of the farm (Pavlak & all, 2021).

In agribusiness in the European Union, and also in Serbia, managers of agricultural holdings are characterized by an unfavorable age and gender structure, form of employment, and educational level. It is characteristic that these parameters are constantly changing and vary from country to country but also between different regions within the country (Ćurčić & all, 2022).

In this context, the aim of the work is to analyze the existing structure of management and management staff at agricultural holdings in the European Union and Serbia in relation to key parameters such as age structure, gender, level of education, training and experience.

Based on the available literature, the research in the paper is based on two hypotheses:

- Unfavorable age structure, migration of younger professional staff to urban areas, inadequate educational level of management staff are limiting factors for more efficient operations in the agribusiness of the European Union and Serbia.
- In Serbia and the European Union, the engagement of trained, professional managerial staff is directly conditioned by the size of the agricultural holding and the amount of income it generates. Professional managerial personnel are engaged in leading and managing large farms, while in smaller agricultural holdings, the owners or family members are the bearers of managerial roles.

## **Methodology**

During the research in this paper, in order to observe and analyze the selected data and the comparative and deductive method, the method of induction, analysis and synthesis were used. The methodological framework and comparative analyses used an overview of the current state of situation in farm managers structure in agricultural sector in EU and Serbia. That supports the acceptance and adaptation of adequate conclusions that would be a key mechanism for the development of sustainability, efficiency and profitability in agribusiness. The structure of the work and the conducted research are aligned with the use of relevant data from the Statistical Office of the Republic of Serbia (SORS) and Eurostat as well as with the use of current scientific and professional domestic and foreign literature. For better understanding, all monitored indicators are presented in tables.

## **Results and discussion**

### **Farm Managers in the EU: the situation in the agricultural sector**

The European Union represents one of the world's most important players in agribusiness. Agriculture is the main sector of the economies of the European Union countries where employment is still at a high level. The structure of the management staff is conditioned by various parameters such as the organizational form and size of the farms, the amount of income generated on the farms, the form of employment of the managers, their level of education, gender and age structure. In relation to the ownership and organizational form (family and non-family) farms, the data indicate that the percentage of managers employed in family agricultural holdings is much higher (95.3%) (Table 1). In terms of age structure, the highest

percentage of managers is in the age group between 40 and 64 years (of which 55.7% in family and even 69.5% in non-family agricultural holdings). Also, a high percentage of managers in family agricultural holdings are managers in the age group over 65 (33.9%). An unfavorable trend is expressed in the age structure of younger managers under the age of 40. This is especially pronounced in family agricultural holdings, where the percentage is 10.4. In the European Union, there are differences in the representation of farm managers and their age structure by country. So, for example, the countries with more prominent younger farm managers under the age of 40 are Poland (282 thousand) and Romania (250 thousand). The countries with the largest number of family agricultural holdings whose managers are between 40 and 64 years old are Poland (394 thousand), Spain (489 thousand), Greece (394 thousand). The European Union countries with the oldest population of managers on family farms, over 65 years old, are Romania (1514 thousand), Italy (459 thousand), Hungary (130 thousand),

Portugal (130 thousand) (EUROSTAT, 2018).

**Table 1.** *Farm managers in the EU by type of farm and age group (EU- 28)*

Age group	Family farms		Non-family farms	
	Numbers in thousands	Percent	Number in thousands	Percent
65 years and over	3325	33,9	66	13,8
40 – 64 years	5474	55,7	336	69,5
Less than 40 years	1022	10,4	81	16,7
Total	9823	95,3	483	4,7

*Source:* Eurostat, 2018.

The data indicate the necessity of including younger human resources in the management structure of family agricultural holdings in order to facilitate adaptation to modern challenges, productivity, efficiency, growth and development of family agricultural holdings. In the structure of farm managers in the European Union, there are pronounced differences in terms of gender and age structure. This is particularly reflected in the data that about two-thirds (70.7%) of farm managers in the European Union are men (Table 2).

**Table 2.** *Age and gender structure of EU farm managers (%)*

Age group	Male farm manager	Female farm manager
65 and over	21,0	12,5
55 - 64	18,5	7,0
45 - 54	17,5	5,3
40 - 44	6,0	2,0
35 - 39	4,0	1,5
25 - 34	3,5	1,0
Less than 25	0,2	0
Total	70,7	29,3

*Source:* Eurostat, 2020.

Data from Table 2 show that farm managers belonging to the older age group dominate in the European Union. In the structure of both sexes, the largest number of managers belongs to the age group over 55 (59%), while this level is extremely unfavorable in the structure of younger managers under 25 (4.7% of both sexes in total). A significant percentage is in the age structure of 40 to 54 years, in which 25.5% of managers are men, and only 7.3% are women (Table 2). In the countries of the European Union, there are also regional differences with regard to this parameter. Thus, for example, a low percentage of participation of women farm managers is characteristic in Germany (9.6%), Denmark (7.7%), Malta (6%), the Netherlands (5.2%). A high percentage of female farm managers is characteristic of the Baltic states of Latvia, Lithuania, and Estonia, where women are represented as managers in about 45% of farms (Eurostat, 2021).

The structure of management staff in agricultural holdings in the EU is characterized by a much higher representation of men (nearly two thirds, 70.7%) compared to female farm managers (close to a third, 29.3%) (Eurostat, 2020).

Data related to the gender structure of farm managers depending on the size of the agricultural holding show the dominant role of men as farm managers (Table 3). It is especially pronounced on smaller family agricultural holdings, but also on medium and larger farms (below 50 ha) and amounts to 90 percent or more.

**Table 3.** *Gender structure of managers on EU farms by size, 2020 (%)*

Farm size	Female	Male
< 2 ha	4,12	95,80
2 – 5 ha	7,74	92,96

Farm size	Female	Male
5 – 10 ha	8,63	91,37
10 – 20 ha	10,34	89,66
20 – 30 ha	6,85	93,15
50 – 50 ha	9,92	90,08
50 – 100 ha	14,42	85,58
> 100 ha	37,87	62,13

*Source:* Eurostat, 2021

The significant participation of women farm managers increases with the increase in the size of the land available to the farms. On farms over 100 ha, more than one third (37.87%) are managers (Eurostat, 2021). Through various development programs, the EU encourages and supports the development of female entrepreneurship in rural areas. The aim of these incentives is not only to establish a balance in the gender structure of farm managers, but also to emphasize greater competitiveness, reduce migration and sustainable development of rural areas for future generations (Babić & all, 2023).

One of the important parameters of the sustainability of human resources in rural areas is the educated structure of farm managers.

**Table 4.** *Educational structure of farm managers in the EU (%)*

	2018	2020
% with practical experience	68,3	72,3
% with basic training	22,6	17,5
% with high school education	9,1	10,2

*Source:* Eurostat, 2020

Based on the data from Table 4, most farm managers in the European Union have only practical experience. That percentage in 2020 is 72.3 and has increased by 4% compared to 2018. A particularly unsatisfactory trend is in the structure of highly educated farm managers. The fact that only one out of ten farm managers has complete agricultural education and training (10.2%) is worrying, while the remaining percentage of 17.5 in 2020 consists of managers with basic training in agriculture (Eurostat, 2020). Regional differences within the European Union are also expressed in this parameter. A small number of EU member states have a high percentage of

farm manager training, such as the Netherlands (62.6%), Luxembourg (53.1%), France (38.4%), the Czech Republic (35.8%). The lowest level of training of farm managers who have full training is in Romania (0.4%) and Greece (0.6%). It is characteristic that these are also the countries (Romania 96.7%, Greece 93.2%) in which the largest share of farm managers whose educational structure is based exclusively on practical experience (Eurostat, 2020). These regional differences are expressed due to differences in national laws, education systems, employment systems and personnel policies of states and regions in the EU (Zečević & Nedeljković, 2014).

### **Farm managers in the Republic of Serbia: the situation in agribusiness**

Farms represent the basic organizational form of business in Serbian agribusiness. The role of the farm manager is to ensure the sustainable and profitable development of the agricultural holding as well as to support the welfare of the wider community (advances the image of the local community, employs local labor, affects the reduction of the migration process, especially of youth and female population, empowers the local budget, etc.) (Jeločnik & all, 2020).

In the structure of family agricultural holdings according to agricultural holding holders and managers and according to gender in the Republic of Serbia, male participation is dominant according to all parameters. The participation of women among managers of agricultural holdings is lower than their participation among holders of agricultural holdings (15.3%), while the participation of men among managers is far more pronounced and amounts to 84.7% (SORS, 2018).

The data from Table 5 indicate that the managers of agricultural holdings are predominantly older persons and that the number of agricultural holdings whose managers belong to the oldest category is increasing. More than 39% of agricultural holding managers in the age category are over 65 years old. An extremely worrying fact is that only 3% of managers belong to the younger category between 25 and 34 years old.

**Table 5.** *Farm managers by age and gender in the Republic of Serbia, 2018.*

Age	Female	Male	Total
over 65 year	51,1	36,9	39,1
55 – 64 year	26,9	29,5	29,1
45 – 54 year	15,0	20,1	19,3



Age	Female	Male	Total
35 – 44 year	5,3	10,0	9,3
25 – 34 god.	1,6	3,2	3,0

*Source:* SORS, 2018

There are also pronounced differences when it comes to the gender structure. The share of women performing the role of farm manager is much higher in the age group over 65 and amounts to more than half, 51%, while it is markedly low (1.6%) in the younger category. A balanced ratio is only present in the 55 to 64 age group category (26.9% of female and 29.5% of male managers) (SORS, 2018). The age structure of managers in the Republic of Serbia is deteriorating. This is indicated by the fact that the share of managers in the oldest group in 2020 compared to 2012 increased by 6.1%, while the share of farm managers under the age of 35 decreased by 1.4% (SORS, 2020).

The size of farms affects the engagement of professional management staff in the harmonious development of specific agricultural activities (Dobre & all, 2021). Table 6 shows the gender structure of farm managers in relation to the size of the agricultural holding. Based on the data from Table 6, it can be concluded that the share of women among farm managers decreases with the increase in the size of the agricultural holding.

**Table 6.** *Structure of managers by gender and size of agricultural holding in RS, (%)*

Farm size	Female	Male
< 1 ha	19,3	80,7
1 – 2 ha	18,4	81,6
2 – 5 ha	14,7	85,3
5 – 10 ha	12,2	87,8
10 – 20 ha	9,9	90,1
20 – 50 ha	7,3	92,7
50 – 100 ha	4,6	95,4
> 100 ha	5,8	94,2

*Source:* SORS, 2018.

The largest share of women among farm managers (19.3%) is in farms smaller than 1 ha. With the increase in farm size, the share of male manager's increases, while

the share of female managers of the largest agricultural holdings over 100 ha is only 5.8% (SORS, 2018).

**Table 7.** *Structure of farm managers according to gender and economic size of agricultural holding in the Republic of Serbia (%)*

Income in EUR	Female managers	Male managers
0 - 2000	21,1	78,9
2000 - 4000	16,8	83,2
4000 - 8000	13,3	86,7
8000 - 15000	10,6	89,4
15000 - 25000	8,4	91,6
25000 - 50000	7,3	92,7
50000 - 100000	6,5	93,5
> 100000	6,2	93,7

*Source:* SORS, 2018

Depending on the economic size of the farms based on the data from Table 7, a higher share of male managers is evident and it increases with the increase in the economic size of the farms. The share of women among managers decreases with the increase in the economic size of the farm. The largest share of women among farm managers is present in agricultural holdings up to 2,000 eur (21%), and the lowest among farm managers with over 100,000 eur (6.2%).

An important parameter is the legal status of the workforce and management on farms. Data from Table 8 indicate that over 90% of agricultural holding holders are also managers and main decision makers on farms.

Differences are evident on medium-sized farms (from 5 to 20 ha). On farms of this size, there is a slightly higher percentage (6.4%) of family members who are in the position of manager. The highest percentage of employed professional managers is on farms of 10-50 ha and amounts to 5.1%. However, it is characteristic that the largest agricultural holding, over 100 ha, also has the highest share of agricultural holding holders who also perform the function of manager.

**Table 8.** *Agricultural holding managers according to legal status and size of agricultural holding in the Republic of Serbia, 2018 (%)*

Farm size	Farm holder manager	Family member manager	Employed manager
< 1 ha	92,6	4,5	2,9
1 - 2 ha	90,9	6,0	3,1
2 - 5 ha	90,2	6,5	3,3
5 -10 ha	89,3	6,4	4,3
10 - 20 ha	88,9	6,0	5,1
20 -50 ha	90,6	4,3	5,1
50 - 100 ha	93,2	3,6	3,1
> 100 ha	94,5	3,2	2,1

*Source:* SORS, 2018

The educational profile of farm managers in Serbia in terms of specialized knowledge and professional training is extremely unfavorable (Table 9).

**Table 9.** *Agricultural holding managers by level of education in the Republic of Serbia (%)*

Type of training and education	Serbia	Belgrade region	Vojvodina	Šumadija Western Serbia	Southern & Eastern Serbia
Practical experience	95,3	96,4	89,9	96,9	96,8
Basic training	3,4	2,2	7,8	2,2	2,1
High education	1,3	1,5	2,2	0,9	1,1

*Source:* SORS, 2020.

The largest number of managers belong to the structure that performs its function on the basis of practical experience. An extremely low percentage is among managers who possess specialized knowledge (1.3%) or have attended specialized professional courses and trainings. Observed according to the regions in Serbia, this percentage is somewhat more favorable in Vojvodina (2.2%), and the lowest in the region of Western Serbia and Šumadija, amounting to only 0.9%. A more favorable percentage in the educational structure of farm managers is in larger agricultural holdings, especially in those that generate large revenues. This is the result of the more favor-

able age structure of the managers of larger agricultural holdings and the need to hire professional managers with specialized knowledge due to the greater volume of work and the application of innovative solutions.

## **Conclusion**

The development of management and entrepreneurship in the agribusiness of Europe and Serbia is the basic assumption of further development, sustainability and improvement of competitiveness in this sector. Managers have a central role in the efficient performance of entrepreneurial functions that influence the development of economic entities and agricultural holdings in rural areas.

Through a comparative analysis of the situation in the European Union and Serbia, the research in the work aimed to identify key problems in the management structure of agricultural holdings, which has an impact on the understanding of roles and the need for greater involvement of professional management staff on farms.

Research in the work based on a comparative analysis in the EU and Serbia confirmed the initial hypotheses. European agriculture and Serbian agriculture have similar characteristics in terms of the management structure and the involvement of managerial staff at agricultural holdings.

In relation to the ownership and organizational form of the farm, it is evident that in both the EU and Serbia, the percentage of managers employed in family agricultural holdings of which they are the owners is very high (95.3% in the EU, and over 90% in Serbia). The age structure of managers in EU and Serbian agribusiness is very unfavorable. Research has shown that in the agribusiness of the EU and Serbia, farm managers who belong to the older age group dominate (33.5% of managers in the EU are over 65 years old, while in Serbia that percentage is 39.1%).

A common problem in agribusiness in the EU and Serbia is depopulation and internal and external migration of managerial resources. This is particularly pronounced in Serbia, where the share of farm managers younger than 35 in 2020 is 1.4% lower than in the previous period. In the EU, this trend is particularly pronounced in the countries of our geographical region, such as Romania, Hungary and Bulgaria.

The role of women farm managers in the development of entrepreneurship and the development of agriculture is significant in the EU, and it is also recognized in Serbia. However, the share of female farm managers in the EU and Serbia differs. The share of women managers of agricultural holdings in the EU is 29.3%, while in Ser-

bia this percentage is almost twice as low and is 15.3%). Also, in Serbia compared to the EU, the share of women in the management structures of small agricultural holdings is higher and amounts to 19.3%. In the EU, the participation of women managers on large farms (over 100 ha) is more pronounced and it amounts to more than 1/3 (37.87%). These parameters point to the need to take more effective support measures and strengthen incentives for women's participation in the management structure of farms.

One of the important parameters that needs to be emphasized in order to strengthen the abilities and skills of farm managers is the educational level, training and training. The educational structure of farm managers in the EU and in Serbia is largely unfavorable. This is indicated by the fact that the largest number of farm managers in the EU perform their management activities based on practical experience and basic training (72.3%). That percentage is even more pronounced in Serbia and amounts to 95.3%. Unlike the EU (where 9.1% of farm managers are highly educated), the percentage of professional managers with formal higher education in Serbia is extremely low and amounts to only 1.3%. This indicates the need to strengthen the motivation and inclusion of young staff in various formal and informal forms of education, greater availability of information and monitoring of modern trends through special management training and training.

Research has also confirmed the second hypothesis that the engagement of professional managerial staff on farms, both in the EU and in Serbia, is conditioned by the size of the farm and the amount of income it realizes. Due to the complexity and scope of operations, professional management is engaged in a far greater percentage in the management of large farms. Small farm owners are also managers, often with less professional skills and education, and perform their management activities and operations based on experience. In order to sustain and develop family farms, it is necessary to constantly raise the educational level and introduce professional management.

Research in the work aimed at identifying key indicators that point to the necessity of a more significant involvement of professional managerial staff on farms, both in the EU and in Serbia. This indicates the need for further research in the area of encouraging and strengthening the role of professional management with the aim of developing efficient, effective and profitable business in agribusiness.

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