THE IMPORTANCE OF HUMAN CAPITAL IN AGRIBUSINESS AND RURAL DEVELOPMENT OF SERBIA[1]

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Abstract

Human capital represents the most important resource and plays a driving force in the efficient development of economic entities and agricultural farms in agribusiness and rural development. Research in the paper aims to analyze and identify positive and negative trends in the structure and operations of the small businesses and agricultural farms, where human resources play a central role. So, the main goal of article is to emphasize research in the field of demographics (age, gender and educational structure, or migration tendencies), socio-cultural, or employment structures that have an impact on the maintenance, improvement and development of human resources in rural areas. Respecting modern approaches in management, marketing and cultural diversity, their application in the field of human resources will influence better understanding and greater investments and implementation of innovative approaches in human capital management in rural areas. Derived research results indicate the need for applying modern methods and techniques of management and culture in order to stop the negative migration trends and improve working and living conditions in rural space. Besides, its required the integration into innovative educational and technological flows, adaptation to cultural changes, encouragement of entrepreneurship and employment with the aim of sustainable development of human resources in rural areas.

Key words: Human capital, rural population, agribusiness, rural development, innovations.

JEL[5]: Q10, Q13, O15

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Introduction

Economic structure of rural areas is largely depending on agriculture (Loizou et al., 2019). The current state of the economic structure of rural areas shows that agriculture, as a basic activity important for the redevelopment of the rural economy, contributes to the greatest extent to the realization of the GDP and the engagement of active human resources (Barrett et al., 2010).

Serbia, in the economic sense in rural areas, is determined by the development of small businesses and farms (Erić et al., 2015) The level of development of mentioned sector is far below what is possible and satisfactory (Popović et al., 2008). The development of farms and small businesses in agribusiness would contribute to increase in the quality and competitiveness of agro-food products, as well as increase in employment and a more stable development of rural areas (Altukhov et al., 2016). To this end, special emphasis should be placed on activity of management and application of modern management techniques and methods in planning, organizing and managing human resources in rural space.

It is important to point out that the management of human resources in agribusiness sector and rural development is still under-researched area and not so quite present in professional research and scientific literature (Mugera, Bitsch, 2005; Konja, Uzelac, 2015). While a number of researchers place special emphasis on the importance of investing in technological improvement, it is important to highlight the fact that the best investment is in human resources or in so-called "vital machines" (Zečević, 2021).

Business-specific practices and culturally dependent management philosophies indicate that human resources are the driving force in efficient development of economic entities in agribusiness and rural development. That is why the term "human capital" is more frequently used. Term human capital in rural population involves educational, labor, cultural, behavioral and intellectual capital (Yakimova, Streltsova, 2020).

According to many authors, human capital occupies central place and has special importance for the development of agribusiness in rural areas. In addition to technology, natural resources, state and agrarian policy and legislation in agribusiness, human capital directly affects the increase in productivity in agriculture, among other things, because it has the ability to adapt to technological, or innovative changes and modern challenges (Zepeda 2001; Kuznetsova et al., 2018; Diebolt, Hippe, 2019).

The use of modern approaches in management, organizational and economic mechanisms in agribusiness and rural development, along with state support to larger infrastructure projects in rural areas, development of traditional activities, application

of IT technology, or improvement of educational structure, directly leads to the cessation of migratory flows, increase in employment and overall activity, or greater competitive advantages in agribusiness and rural areas (Fikhtner, Shvedina, 2019).

Methodology and Data Used

Performing the research, in order to observe and analyze the selected data, comparative and deductive method, or method of induction, analysis and synthesis were used. Research was based on relevant data for the observed ten years period. The structure of the work and conducted research are aligned with the use of relevant data from the Statistical Office of the Republic of Serbia (SORS), as with the review of current scientific and professional literature. Used data and methodological approach aims to indicate trends and possibilities of improving the development of human resources in rural areas through increasing employment, changes in the educational structure, stopping migration movements, etc. This indicates the need for further research and the application of innovative methods and techniques in the development of human resources in agribusiness.

Results and Discussion

Farms in Serbia: The situation in the agricultural sector

The dominant form of economic entities in rural areas is represented by agricultural holdings (Bogdanov, Rodić, 2014). According to the Census of Agriculture in 2012, there are 631,552 agricultural holdings in Serbia. The largest share has family farms (99.5%), while only 0.5% are farms owned by legal entities or agricultural cooperatives. The largest percentage of agricultural farms owned by legal entities are in the Vojvodina region, around 46.7%. The entrepreneurial form in this activity is most represented in Šumadija and Western Serbia, amounting up to 40% (SORS, 2013).

In the period 2012-2018, the number of agricultural holdings has been recorded a pronounced negative trend in Serbia, so their number in 2018 was for 10.6% lower than in 2012 (Table 1.). Observed trend will continues due to unfavorable demographic structure and pronounced migration processes.

It is characteristic that mentioned negative trend was recorded in all regions of Serbia. First of all, this was expressed in the region of Vojvodina, where the number of farms decreased for 13.7%, as well as in the region of Eastern and Southern Serbia, 12.1%. This trend is monitored and correlated with the decrease in the number of farms according to their size structure. So, in observed period, there was negative trend in number of farms from the smallest and largest size group, with the exception of the farms from the category of 2-5 ha, whose number was relatively stable. Mean-

while, the average size of agricultural holdings increased, with the recorded growth of 18.1%. This indicates a sharp trend of concentration of farms' number and areas they cultivate within the segment of medium-sized farms.

Table 1. Basic structural characteristics of agricultural holdings in Serbia

2018.					Index 2018/2012 (%)	
According to the area of UAL	**Farms**	**%**	**UAL (ha)**	**%**	**Farms**	**UAL (ha)**
≤ 0.5	44,678	7.9	9,167	0.3	62.3	85.8
> 0.5 ≤ 1	72,483	12.8	54,801	1.6	68.2	73.5
> 1 ≤ 3	188,615	33.4	358,709	10.3	89.9	93.3
> 3 ≤ 5	100,301	17.8	390,397	11.2	99.3	100.0
> 5 ≤ 8	71,639	12.7	450,259	13.0	79.4	72.7
> 8 ≤ 10	23,892	4.2	212,939	6.1	-	-
> 10	62,933	11.1	1,999,622	57.5	120.3	102.1
Total	564,541	100.0	3,475,894	100.0	89.4	101.1
According to the number of UGS	**Farms**	**%**	**UGS**	**%**	**Farms**	**UGS**
0 LSU	129,489	-	0.0	0.0	91.1	0.0
> 0 ≤ 1	146,004	33.6	79,586	4.1	104.9	106.0
> 1 ≤ 3	155,515	35.7	279,887	14.5	80.9	81.0
> 3 ≤ 5	54,793	12.6	212,558	11.0	75.1	75.8
> 5 ≤ 10	47,026	10.8	326,340	16.9	82.8	84.1
> 10 ≤ 20	21,130	4.9	287,596	14.9	106.6	108.1
> 20 ≤ 30	5,047	1.2	122,381	6.3	121.3	122.7
> 30 ≤ 50	3,201	0.7	121,644	6.3	132.1	133.2
> 50	2,336	0.5	503,848	26.1	127.7	106.4
Total	435,052	100.0	1,933,840	100.0	88.9	95.7
By Economic Size (Standard Output - SO)	**Farms**	**%**	**SO (1,000 EUR)**	**%**	**Farms**	**SO**
<2,000 EUR	156,180	27,7	200.000	3,7	53,9	70,4
2,000–4,000 EUR	132,768	23,5	433.000	8,1	94,2	106,8
4,000–8,000 EUR	130,180	23,1	815.000	15,3	115,5	128,7
8,000–15,000 EUR	83,141	14,7	977.000	18,3	159,3	175,9
15,000–25,000 EUR	34,983	6,2	720.000	13,5	193,1	209,4
25,000–50,000 EUR	18,881	3,3	693.000	13,0	168,7	180,2
>=50,000 EUR	8,408	1,5	1.501.000	28,1	125,3	132,7
Total	564,541	100,0	5.339.000	100,0	89,4	142,8

Source: SORS, 2012; SORS, 2018.

According to the economic size, a relatively high share is made by the farms in the category up to 2,000 EUR (27.7%) and up to 4,000 EUR (23.5%), which together make up to 51.2% of the standard output. These data indicate that in Serbia, the profitable sustainability of farms depends on the income that the employed members of the farms earn outside of agriculture. So, this indicates that other sources of income are still important for the strategy of survival and development of agricultural farms (Subić et al., 2015).

Large number of small farms participate in the market chain, while some of medium and large agribusiness companies operate alongside them. In same time, small farms do not have significant participation in the commercially oriented production chain. Reasons for this should be found in small volume and unhomogenized quality of derived agro-products (Nastić et al., 2014; Veličković, Jovanović, 2021). Contrary to them, large farms whose production and activity is solely market and export oriented are organized into efficiently structured market chains. Farms in rural areas, as specific business entities that provide basic sources of income, influence the increase in employment and activities through the performance of basic activities. They are also playing significant role in preservation of cultural values and local specificities, while they are drivers in the creation of new businesses, and thus the development of alternative sources of income to rural population (Mihailović et al., 2020).

State and trends of human capital development in agribusiness

Farms in rural space represent the main source of human capital (Dimovski et al., 2022). In Serbia, there is a negative tendency in farms' number. This is followed with fact that there is also decline in employment and engagement of human resources in agriculture. From 1,442,628 persons engaged in farms in 2012, it was reduced to 1,336,940 in 2018. Simultaneously, the total volume of work, expressed in full employment equivalent (FEE), has been remained the same. This data can be interpreted from the aspect of the increase in degree of utilization of already existing pool of labor-engaged human resources.

Farms in Serbia are organized as family-oriented business entities (Borychowski et al., 2020), which is indicated by the data in Table 2., where the largest number of employees (98.5%) are members of family households.

In the gender structure, the share of women in the overall human resources at the farms is 59.3% (SORS, 2020). This share is more pronounced at smaller farms where it comes up to 64% (55% is at larger farms). In the management structure, the share of women is low and amounts 19.4%. Despite the fact that the share of women in the management structure has followed a slight upward trend in recent years, these data indicate the unequal position of women in the management structure of farms.

Table 2. Basic structural characteristics of holdings and labor force

Farms according to the age of farm holder	Farms	%
<35	17,384	3.1
35–<45	48,878	8.7
45–<55	99,742	17.7

Farms according to the age of farm holder	Farms	%
55–<65	156,219	27.8
>= 65	240,671	42.8
Total	562,895	100.0
Farm workforce	**No.**	**%**
Persons	1,336,940	100.0
Of which family workforce	1,317,330	98.5
Annual work units (AWU)	645,733	100.0
Of which family workforce	591,770	91.6
AWU/AH	1.14	-
AWU/UAL	0.19	-
AWU/UGS	0.33	-

Source: SORS, 2020.

The management structure at the farms is dominated by older people. This is indicated by the fact that over 40% of managers are in the group of 65 years. There are low percentage of human resources in the management structure that belong to age category of up to 45 years, only 11.8%. Also, the share of farms with younger managers is decreasing. One of the main reasons is migration of younger population from urban space, both as internal (rural-urban) and external emigration. One of the important parameters of the sustainability of human resources in rural areas is educational structure (Table 3.). The educational characteristics of human resources employed at farms are noticeably less favorable compared to the urban population.

Table 3. Demographic indicators and educational structure in rural areas

Element	Serbia	Rural areas
% without formal education	13.7	23.4
% with primary school	20.8	27.7
% with high school education	48.9	42.4
% higher education	16.2	6.1
% unknown	0.4	0.4

Source: SORS, 2018.

According to the data from Table 3., in rural areas there is a dominant share of human resources with completed high school (42.4%). A particularly unfavorable trend is in the structure of human resources in rural areas with the percentage of basic and no formal education amounting up to 51.1%. The educational structure of the workforce due to the low representation of highly educated personnel (6.1%) in rural areas could be a limiting factor of their future development. Formal education of human resources, especially farm managers, is modest and at unsatisfactory level. More than half of managers (54%) perform their duties based on practical experience. A some-

what more significant percentage of them are completed high school (38%), while 5% completed college or university, while only 7% was attended specialist courses and other educational programs. In order to stop such trends, there is pronounced need to involve human resources from rural areas in innovative formal and informal educational programs.

One of the key economic, structural and social issues of the overall economy, including rural areas, is unemployment (Vukadinović et al., 2018). Labor market indicators according to activity and employment status, age and gender in rural and urban areas indicate a growth trend. These data also indicate unfavorable features of the labor market in rural areas, as young workers have a higher unemployment rate compared to the total working population. The rate of employment and activity are higher in rural than in urban areas, but this data is not correlated with the quality of employment in rural areas.

Table 4. Population according to employment, activity, type of settlement, age and gender

Element	2016.		2020.		2020. other areas	
	Urban	Other	Urban	Other	Young population	Female population
Activity rate (%)	52.2	55.0	52.3	56.4	35.6	47.1
Employment rate (%)	43.0	48.5	47.2	51.9	26.7	42.8
Unemployment rate (%)	17.6	11.9	9.8	7.9	25.1	9.1
Inactivity rate (%)	47.8	45.0	47.7	43.6	64.4	52.9

Source: SORS, 2016; SORS, 2020.

There are large differences in the structure of human resources in terms of gender, age and employment in rural areas. This is particularly reflected in the level of employment among young people and the female population, which is lower than the average of the population over the age of fifteen. The employment rate of men is 61% and is much higher than women (42.8%). The same result also derived comparing the activity rate, which in rural areas is higher for men, 65.6%, than for women, 47.4% (Table 4.). Slight increase in the share of women in entrepreneurial activities and participation in alternative sources of income indicates the stopping of this trend.

The unfavorable trend is particularly pronounced among young in working age, as was indicated extremely high rates of unemployment (25.1%) and inactivity (64.4%). By establishing certain support measures to stop migration, as for

young people returning to the countryside, or encouraging entrepreneurship initiatives in rural areas, mentioned trend could be stopped.

A significant difference is evident in the level of employment and the rate of activity comparing the rural and urban areas, mainly as in rural areas the leading share in the employment is made by the farm owners, while household members represent auxiliary resources employed on the farm. The largest share in the category of auxiliary employees in rural areas is made up by women (16.6%), (SORS, 2020). In rural areas, women have an unfavorable working status, which is reflected in insecure employment contracts (especially for seasonal workers), performing auxiliary jobs and representing an auxiliary source of labor force, which directly affects their social status.

The data indicate evident need to put a special emphasis on the role and importance of human capital in the revitalization programs of rural areas. A special focus should be turned to younger population as the primary source of labor force in rural areas (Grujić, Roljević, 2014) towards the motivation to stay, return and stopping migration flows, improving the educational structure and involving young people in specialized educational programs, greater involvement of female population in farms' management structure and improving social infrastructure. This will directly affect the increased scope of activities and employment in rural areas.

Conclusion

Performed research indicates negative trends in observed parameters regarding the state of human resources in rural areas. In addition to identifying the basic problems, a special focus should be given to increasing employment through the promotion of entrepreneurship, or improving the quality of life by advancement of educational and social programs. Also, some focus is turned to stopping migration processes throughout promoting alternative sources of income, or undertaking several activities and measures aimed to return and retention of human resources in rural areas. In particular, the need for further research in the field of application of modern scientific principles of human resources management should be emphasized, whose application in practice would stop the current negative trends.

Human resources represent an important factor in improving co-currentness in the field of agriculture, i.e. they represent one of the most significant elements that influence the development of economic entities and farms in rural areas.

Human capital management in agriculture includes far more complex procedures that are conditioned by numerous factors such as: market development, regional agricultural policy, physical and soft infrastructure, demographic policy, migratory

movements, education, cultural changes, legal and technological environment, etc. In this sense, the philosophy of the marketing strategy indicates the necessity of segmentation and research of geographical, demographic, psychographic, or behavioral characteristics of human resources in rural areas (Zecevic, 2011).

Research, based on official statistic data, indicates the identification of several key problems in the field of human resources in agriculture. One of the main is relating to depopulation and unfavorable age structure in rural areas, which arose as a result of rapid (re)industrialization and urbanization. As a result, intensive internal migration (rural-urban) and external migration (emigration) were expressed in rural areas. A particularly unfavorable trend of migration is present in the structure of young working population, requiring special measures for stopping such a flow. Research also points to the key causes of the outflow of human resources from rural areas, as are the absence and low quality of jobs, low level wages, insufficient motivation, and underdeveloped elements of infrastructure.

One of the important factors in improving human resources is education. In rural areas, especially at farms, the data show a low level of employees' education (specifically expressed in the population of young working personnel). This points to the necessity of motivating and involving younger staff in various formal and informal forms of education, greater availability of information and monitoring of contemporary trends through special training and education.

In addition to the aforementioned factors on the development of rural areas, especially in the sector of agriculture, it is important to point out the need to reduce the gender gap and inequality. In traditional societies, such as Serbian, data show that the activity and employment rates of women are significantly lower than those of men. One of the key indicators that affects the reduction of this gap is represented by changes in culture that affect the abandonment of exclusively men traditional values and the reduction of differences between the genders. Appreciation of these cultural changes in the last decade in rural areas, the trend of women's involvement in farms' management structure has increased, directly affecting the improvement of creativity and introduction of new values in operations of farms and economic entities in agriculture.

There is an obvious need to improve and encourage sustainable local development, with the improvement and prosperity of human resources in agriculture being set as a priority. Primarily, this includes the application of modern methods and techniques of management and culture in order to improve working and living conditions, integration into innovative educational and technological flows, adaptation to cultural changes, promotion of gender equality towards the sustainable development of human capital in rural areas.

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