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# EVALUATION OF REALIZED INVESTMENTS IN AGRICULTURE IN THE CARPATHIAN REGION IN SERBIA<sup>1</sup>

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## Summary

*Central transition phase, in which there is Serbia, represents a radical turning point in the future development, not only agriculture, but the overall national economy and all of its participants. Consequently, investment in new economic subjects (companies and farms), recapitalization of existing subjects (companies and farms) and the consolidation of the financial system can greatly accelerate the development of a market economy in our country. However, a large number of economic subjects (companies and farms) have negative business performance, reflected in the reduction of market share and profitability, growth of indebtedness, inadequate investment and increased volume of diversified business activities at the expense of the primary job. Also, although the upward trend registered investments, macroeconomic indicators of investment trends indicate a high risk investment, both in agricultural estates, as well as companies from other industries. Imposes a dynamic investment risk reduction, which would increase the attractiveness of investment and stimulate domestic and foreign investors to evaluate various combinations of risk and return. Given the perspective of the enlargement of the European Union, resulting in Serbia, as well as the fact that in the future development of our farm investment activity to occupy a crucial place, the survey focused on the evaluation of investments in agriculture in the Carpathian region in Serbia.*

**Keywords:** *investments, agriculture, Carpathian region, Serbia.*

## INTRODUCTION

*Sustainable use of agricultural land*, based on the traditional system of mountain agriculture, which provides a high degree of ecological rationality, presents an excellent basis for development of integral and organic production in protected area of the Carpathian region in Serbia.

*Rural areas*, which are characterized by ecologically safe locations in the Carpathian region in Serbia, are suitable for the establishment and development of small and medium enterprises for the processing of agricultural raw materials and finished products getting (specific or higher-quality, protected geographical indications).

*Sustainable tourism and development of cross-border and regional cooperation*, related to protected areas and development initiatives, providing additional impetus to sustainable agricultural and rural development in the Carpathian region in Serbia.

*Investments* represents main physical factor of economical and social development of any country, region and local community. The extent, structure and efficiency of investment mostly depends how and to what level will be solved and the basic issues of sustainable development of agriculture in the Carpathian region in Serbia.

The commitment of our country to European integration requires a new definition of the role and importance of the agricultural sector, as well as making a very clear conceptual framework and strategies that will answer the key questions in the field of sustainable development. In the EU accession process is expected to adopt numerous of new reform legislation, and for investors the most important are laws concerning land and construction, and regulation of industrial and technological parks [6].

One of the classifications adopted in the literature, all investments are shared in economic and non-economic. The basic function of economic investment is that it assures the continuity of the

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production process at the same level, ie. simple reproduction. Consequently, they have a role to play in providing replacement of worn-out fixed assets allow the replacement of the production process. Also, business investment serve to allow the reproduction of the social process of production at a higher level, ie. expanded reproduction. Investment activity is a necessary part of the process of reproduction and the basic prerequisite for efficient performance of material production in the long run [5].

In order to create a realistic picture of the progress so far achieved a total investment in fixed assets, a chart showing the investment in the Republic of Serbia, Central Serbia<sup>5</sup> and the Carpathian area. The analysis covers the period of ten years (2001-2010.), For all of these areas (Table 1).

**Table 1. The realized investments in the economy \* (000 RSD)**

Year	Republic Serbia**	Central Serbia		Carpathian region	
	RSD	RSD	% of total investment in the Republic of Serbia	RSD	% of total investment in the Republic of Serbia
2001.	55.188.399	41.840.003	75,81	300.205	0,54
2002.	102.860.663	79.557.972	77,35	528.014	0,51
2003.	115.662.223	89.976.409	77,79	679.740	0,59
2004.	152.929.464	123.445.066	80,72	961.752	0,62
2005.	163.549.507	133.776.108	81,80	1.076.931	0,66
2006.	340.795.050	246.477.735	72,32	888.768	0,26
2007.	482.340.888	366.865.027	76,06	1.521.450	0,32
2008.	472.746.680	360.307.995	76,33	1.554.482	0,33
2009.	369.438.089	280.898.157	76,03	2.393.200	0,65
2010.	425.400.001	325.375.393	74,49	4.278.232	1,11

\* Investments in capital assets.

\*\* Without data for Kosovo and Metohia (with the exception of 2010.).

Source: Statistical Office of the Republic of Serbia. *Municipalities in Serbia 2002-2011*; Statistical Office of the Republic of Serbia. *Investments of the Republic of Serbia 2002-2011*.

At the Republic Serbia level in general, as well as Central Serbia in the period until 2008., there has been a positive trend of investments (with emphasis on increased investment activity 2006th compared to 2005., or 2007. compared to 2006.year). Under the impact of the global economic crisis, initially weakened investment flow (2008. year), Followed by a significant decline (2009. year). Progress of legislative reform in accordance with the regulations of the European Union (EU), has led to the ease of operation and safety of investments (ie, until the investment growth in 2010., respectively).

With the exception of the 2006th year, total gross fixed capital formation in the Carpathian area are in constant growth (especially the 2010th in the respective 2009.), with an average annual growth rate of 34.34%. However, throughout the period, the total realized investment in this area, compared to the total realized investment in Serbia as a whole, is extremely low (ie, reflecting an average annual share of barely 0.56%). At first glance, it can be said that the area of the Carpathian area has a very good flow of economic development, but it should be recognized that such a high average annual growth rate of overall investments due primarily low base in the initial observation period (the period 2001-2003. year).

Taking into account the EU enlargement process, it can be said that in the future development of agricultural holdings in Serbia belong to an important place investments in the fixed assets. They play an important role in realizing the goals and priorities of the agricultural and rural development, primarily because they are the driving instrument of quantitative and qualitative growth of total agricultural production and factors of production (crop and livestock), but also to create conditions for a better life in villages. The growth of investment in agriculture is the

<sup>5</sup> Carpathian region in Serbia administratively includes areas of Municipalities Golubac, Kučevo, Majdanpek, Kladovo and Negotin.

condition of its technical and technological modernization, but also an important factor of economic and social stability of the country [5].

Without adequate size and designed the structure of investments can provide growth for the primary and permanent working capital, job growth, raising the performance of the work equipment, better productivity, diversification of production and so on., In any regional agricultural and rural level, and or at the national [4].

When it comes to gross fixed capital formation in agriculture, it is evident that those at the level of Serbia in general reflect the periodic variations are most pronounced in 2003. ( decrease of 37,38% compared to 2002.), and 2006. year (an increase of 163,49% compared to 2005.). Central Serbia, also follows the cyclical flow of investments in agriculture, which is particularly prominent 2002nd (reflecting an increase of 101,53% compared to 2001.) and 2010. year (reflecting a decrease of 42,06% compared to 2009.). Throughout the analyzed period (2001-2010. year), in the Carpathian area was recorded very uneven trend of investments in agriculture, which is the strongest growth in 2005. (5.432,03% over the previous year), while the most noticeable decline in 2008. year (77,45% compared to the previous year). On the other hand, in some years is the realization of investments recorded in the agriculture sector, a fact that can significantly slow down the implementation of the goals of sustainable agriculture and rural development in the Carpathian region (*Table 2*).

**Table 2. The realized investments\* in agriculture\*\* (000 RSD)**

Year	Republic Serbia**	Central Serbia		Carpathian region	
	RSD	RSD	% of total investment in the Republic of Serbia	RSD	% of total investment in the Republic of Serbia
2001.	3.146.845	998.683	31,74	13.817	0,44
2002.	5.206.654	2.012.596	38,65	33.669	0,65
2003.	3.260.612	1.219.717	37,41	0	0,00
2004.	3.721.166	1.702.354	45,75	256	0,01
2005.	5.028.793	2.881.800	57,31	14.162	0,28
2006.	13.250.369	5.170.798	39,02	0	0,00
2007.	14.384.811	5.736.605	39,88	55.735	0,39
2008.	21.357.929	5.306.541	24,85	12.566	0,06
2009.	14.174.921	4.376.208	30,87	0	0,00
2010.	9.219.328	2.535.698	27,50	0	0,00

\* Investments in capital assets.

\*\* Agriculture, hunting, forestry and water management.

\*\*\* Without data for Kosovo and Metohia (with the exception of 2010.).

Source: Statistical Office of the Republic of Serbia. *Municipalities in Serbia 2002-2011*; Statistical Office of the Republic of Serbia. *Investments of the Republic of Serbia 2002-2011*.

In this case also, using the absolute value of actual investments in agriculture, can get to the average annual growth rate in the project area. In the Republic of Serbia, as well as at the level of Central Serbia, the average annual growth rate of investments in agriculture are positive (slightly higher in the first: 12,69% compared to the second case: 10,91%). Given the lack of investments in agriculture at the level of the Carpathian area in the last two years of the period, determined by the average annual growth rate for the time interval 2001-2008. years, which amounts to a negative value (-1,35%).

## MATERIALS AND METHODS

In the implementation phase the subject of research, it is necessary to identify the data / information from multiple sources (scientific and statistical publications) that are primarily related to the following topics: investment, economy, agriculture and demography.

In order to assess the actual investment in agriculture in the Carpathian region in Serbia, applied a methodology to calculate the volume of financial means (financial) investment in capital assets based on the following indicators [7]:

- realized investments in agriculture per agricultural inhabitant;
- realized investments in agriculture per active farmer;
- realized investments in agriculture per per individual farmer;
- realized investments in agriculture per person employed;
- realized investments in agriculture per agricultural unit;
- realized investments in agriculture per unit of arable land;
- realized investments in agriculture per unit of ploughland;
- realized investments in agriculture per head of cattle.

A way that follows the research scope of investments in the Carpathian area, can be useful for each area of the Danube region in Serbia (*Metropolitan area Belgrade- Novi Sad*, which make cities: Belgrade, Novi Sad, Pančevo, Smederevo, and local governments with the status of municipalities: Beočin, Irig Sremski Karlovci, Indija, Ruma, Pećinci and Stara Pazova<sup>6</sup>; *Special Nature Reserve Upper Danube*, which includes administratively municipalities: Sombor, Apatin, Bač and Bačka Palanka) and of significant benefit in making management decisions at the macroeconomic level.

## RESULTS AND DISCUSSION

In order to obtain a more realistic assessment of realized investments in agriculture in the Carpathian region in Serbia, were used indicators for both regional and national levels (*Table 3*).

Based on these results, it can be said that of all the observed maximum indicator value obtained in actual investment in agriculture per person employed<sup>7</sup>, while the lowest value was obtained with actual agricultural investment per unit of agricultural land, and in the following proportions:

- Republic Serbia (102,84:1);
- Central Serbia (159,99:1);
- Carpathian region (351,61:1).

Largest investments per person employed are realized in the Republic of Serbia, while the lowest value of these investments received in Carpathians. The largest volume of investment per unit of agricultural land was also made in the Republic of Serbia, while the lowest value of this magnitude was in the Carpathians.

At the level of the Carpathian area, and at all observed categories achieved significantly lower values than is the case with the level of Serbia in general and the level of central Serbia. Accordingly, the weakest comparative results were obtained with the actual investment in agriculture per unit of agricultural land (0,02:1 than in the first case and 0,05:1 compared to the second case), the best results were registered with the actual investment agriculture per agricultural inhabitant (0,27:1 than in the first case and 0,52:1 compared to the second case).

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<sup>6</sup> For this area often uses the term Middle Danube.

<sup>7</sup> The participation of employees in agriculture in the total number of employed persons is considerably lower than the share of the agricultural in total population (regardless of the observed area).

**Table 3. Score of realized investments\* in agriculture \*\***

Indicator	Unit of issue	Territory		
		Republic Serbia***	Central Serbia	Carpathian region
Realized investments in agriculture per agricultural inhabitant ****	RSD	6,37	3,34	1,73
Realized investments in agriculture per active farmer ****	RSD	9,84	4,98	2,48
Realized investments in agriculture per individual farmer ****	RSD	10,68	5,20	2,58
Realized investments in agriculture per person employed *****	RSD	431,23	244,51	26,12
Realized investments in agriculture per unit of arable land *****	RSD	4,19	1,53	0,07
Realized investments in agriculture per unit of ploughland *****	RSD	5,058	1,96	0,09
Realized investments in agriculture per head of cattle *****	RSD	6,47	2,93	0,15

\* Investments in capital assets.

\*\* Agriculture, hunting, forestry and water management

\*\*\* Without data for Kosovo and Metohia (with the exception of 2010.).

\*\*\*\* The data were taken in 2002. year (according to the census).

\*\*\*\*\* The data were taken in 2008. year (as in the period 2009-2011. was not year of realized investments in agriculture Carpathian area).

Source: Statistical Office of the Republic of Serbia. *Municipalities in Serbia 2002-2011* [1]

Statistical Office of the Republic of Serbia. *The 2002 census. (Total and agricultural population in Serbia)* [3]

Statistical Office of the Republic of Serbia. *Investments of the Republic of Serbia 2002-2011* [2]

Looking at the first three indicators, the results also point to the fact that the Carpathian area does have drastically increased variation in the level of the Republic Serbia and level of Central Serbia. However, when it comes to values obtained for the other parameters, the results of this area are dramatically lower compared to the other two areas.

## CONCLUSIONS

Drawing on concrete results, obtained in the course of the assessment of investments in agriculture, summary we can conclude the following:

- strikingly lower investments have caused less economic growth Carpathian area in the relation to economic development, Central Serbia and the Republic of Serbia in general;
- the average annual growth rate of gross fixed capital formation in agriculture, which was obtained on the basis of the absolute values shown, only at the level of the Carpathian area is negative (the fact that in the analyzed period of time in 40% of cases there was no cash investment);
- agriculture evaluated from multifunctional aspect, provides a very weak contribution to the maintenance of economic and social security of citizens in the Carpathian region in Serbia;
- as a result of reduced investment in the field of agriculture, there is still lack of presence of foreign capital, and the efforts of the majority of finance channeled to other sectors of the economy in order to establish balance and ease of valuation of all available areas of

comparative advantage, gross fixed capital formation in the agriculture in the Carpathian area, exhibit markedly low economic effects.

On the other hand, should give place to identify and implement new methods for the evaluation of investments in agriculture at the macroeconomic level, and the possibility of free choice in the realization of the concept of sustainable agriculture and rural development.

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