

# ANALYSIS OF REALIZED INVESTMENTS IN AGRICULTURE ON THE TERRITORY OF DANUBE BASIN IN THE REPUBLIC OF SERBIA<sup>1</sup>

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## Abstract

*Investments represent basic material factor of economic – social development, from whose volume, structure and efficiency in great measure depends how will be and until which level will be solved major questions of sustainable development of agriculture in any country, region or local community. Considering potential perspectives for Serbia that come from the process of European Union (EU) enlargement, as well as that in sustainable development of agricultural husbandries investments will play key role, this paper is focused on analysis of realized investments in agriculture on the territory of Danube Basin in the Republic of Serbia. In that context, frontiers of research include: (1) analysis of realized investments in agriculture on the territory of Upper Danube Basin; (2) analysis of achieved agricultural investments in area of Metropolitan Belgrade - Novi Sad and (3) analysis of realized investments in agriculture in the Carpathians.*

**Key words:** *investments, Upper Danube region, Metropolitan area Belgrade - Novi Sad, the Carpathians, Republic of Serbia*

## Introduction

According to research activities and planned frontiers of UNESCO MAB preserve of biosphere „Danube-Drava-Mura“, for the analysis of realized

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investments in agriculture, ***territory of Upper Danube Region*** is observed in wider context and covers administrative territory of the Sombor city, as well as administrative area of the municipalities of Apatin, Bača and Bačka Palanka.

Having in mind solutions from the Regional spatial plan of administrative territory of Belgrade city (Official gazette of Belgrade city, no. 10/2004), Statute of Novi Sad city (Official gazette of Novi Sad city, no. 43/2008) and Draft of spatial plan of Republic of Serbia (2010), as well as considering defined research area, ***territory of Metropolitan area Belgrade-Novı Sad***, for the analysis of realized investments in agriculture, is observed in narrow sense and covers administrative area of Belgrade city (17 municipalities) and Novi Sad city (2 municipalities), as well as administrative area of cities that are located on the axis Belgrade-Novı Sad and gravitated to Danube river: Pančevo and Smederevo, and administrative area of municipalities that also lies on the axis Belgrade-Novı Sad and gravitated to Danube river: Beočin, Irig, Sremski Karlovci, Inđija, Ruma, Pećinci and Stara Pazova.

Observing a frontiers of the Carpathians in the Republic of Serbia, defined by Carpathian convention (Official gazette of RS – International agreements, no. 102/2007) and proposal for their enlargement, during the Convention implementation (REC-EURAC, 2006), as well as area of Spatial plan for special purpose National park „erdap“ (Official gazette of RS, no. 118/2009) and Master plan of touristic destination „Lower Danube region“ (2007), ***territory of the Carpathians in the Republic of Serbia***, for the analysis of realized investments in agriculture, includes administrative area of the municipalities Golubac, Kulevo, Majdanpek, Kladovo and Negotin.

Volume, structure and efficiency of investment in great measure affect how and until which will be solved basic issues of economic growth, balanced economic development, employment, level of living standard, etc.

Business ambient within the territory of Danube Basin, as well as in the whole Serbia, has considerably advanced thanks to implementation of number of laws and regulations since 2001 to nowadays. Main goals of law reforms, those are in accordance to European Union legislative, are directed to business simplicity and safer investment. In the process of EU accession is expected a establishment of many new reform laws, so for

investors the highest importance will have laws directed to land and construction, as well as legislation connected to industrial and technological parks (Subi , 2012.).

In the context of potentials for investments attraction, it should be underlined that the business costs in the Republic of Serbia are relatively more favourable in compare to other countries within the Region, what represents a result of ([www.siepa.sr.gov.rs](http://www.siepa.sr.gov.rs)):

- *Lower tax rates*, as are: corporate tax of 10%; VAT of 8 or 20%; Income tax of 12%;
- *Number of investment incentives*, which includes state subventions for direct investments (3,000 – 10,000 €new employee), corporate tax exemption in the period of 10 years for big investments, as well as income tax and social insurance exemption for the employees younger from 30 and older than 45 years;
- *Cheaper communal services and products*;
- *Quality and price of manpower* which are according investors opinion one of key reasons for investment. Human resources are characterised by: high productivity (within the industry it grows per annual rate of 11%); excellent technical education (1/3 of around 14,000 graduated students comes each year from faculties of natural sciences); much lower labour costs (they amount less than 50% of salary expenditures in new EU member states from East Europe);
- *Free trade regime*, with Russian Federation and countries of Southeast Europe (CEFTA Agreement);
- *Stimulation of production activities* through lower fees for construction land arrangement based on number of employees.

### **Material and working method**

Conduction of mentioned research imposed data/information collection from many resources (scientific and statistical publications) that before all refer to following thematic areas: investments, economy, agriculture and demography.

For a analysis of realized investments in agriculture on the territory of Danube Basin region in Republic of Serbia was used methodology that implies overview of volume of financial investments in fixed assets, coming from next indicators:

- General characteristics of up today investments;
- Investments as factor of development of agriculture;

- Evaluation of achieved investments in agriculture.

Used analysis method for volume of realized investments in agriculture on the territory of Danube Basin in Serbia, could be used for any other region in Republic, or for complete Danube Region.

### **General characteristics of previous investments**

For more realistic perceiving of up today investment activity, accent was put on trend of totally realized investments in fixed assets on the territory of the Republic of Serbia and Danube Region. Analysis includes period of ten years (2001-2010) for mentioned areas.

On the Republic level, during the complete period of observation was noted a positive trend of investment, that was terminated in 2009, mainly caused by the impact of the global economic crisis.

*Level of investments in the Upper Danube region*, had certain degree of oscillations, but generally had a positive trend (Table 1.).

Share of investments of mentioned area in total investment in Serbia is in range from 1.68 to 3.42%. The largest amount of investments in Upper Danube region was made in 2008 (around 16.18 billion RSD), when share of investment in region in total sum of Republic investments amounted 3.42%. Unfortunately, the minimal amount of investments was made in the region of Upper Danube during the 2001 (1.60 billion RSD), with share in total investments on Republic level of 2.90%. In last analyzed year (2010) total realized investments in observed region took share of 1.99% of total investments on Republic level. Increased participation is before all a result of bigger investment growth in the Upper Danube region in compare to increase in investment activity in Serbia as a whole.

By calculation of the average annual growth rates, it turns out that the rate achieved at the Republic level (25.47%) was higher than the rate achieved at the level of the Upper Danube region (20.30%). Consequently, it can be concluded that the poorer investment activity caused a slower economic growth of the Upper Danube region in compare to economic development of the complete Republic of Serbia. This is a fact that is pointing to greater unemployment and less number of newly created jobs in the economy of the Upper Danube region compared to the national level.

**Table 1.** *Spatial distribution of totally realized investments\* in the Upper Danube region (in 000 RSD)*

Year	Unit of measure	Territory	
		Republic of Serbia**	Upper Danube region
2001.	RSD	55,188,399.00	1,600,745.00
	%	100.00	2.90
2002.	RSD	102,860,663.00	2,922,406.00
	%	100.00	2.84
2003.	RSD	115,662,223.00	2,143,475.00
	%	100.00	1.85
2004.	RSD	152,929,464.00	3,442,369.00
	%	100.00	2.25
2005.	RSD	163,549,507.00	3,794,830.00
	%	100.00	2.32
2006.	RSD	291,845,739.00	4,895,258.00
	%	100.00	1.68
2007.	RSD	398,990,391.00	9,262,916.00
	%	100.00	2.32
2008.	RSD	472,746,680.00	16,178,900.00
	%	100.00	3.42
2009.	RSD	369,438,089.00	7,329,942.00
	%	100.00	1.98
2010.	RSD	425,400,001.00	8,446,205.00
	%	100.00	1.99

\* *Investments in fixed assets of social sector (which includes also cooperative, mixed and public form of ownership) in current prices.*

\*\* *Data for Kosovo and Metohija are not included.*

**Source:** *Opštine u Republici Srbiji 2000-2010, RZS, Beograd; Investicije u Republici Srbiji 2000-2009, RZS, Beograd.*

***On the level of Metropolitan area Belgrade- Novi Sad***, during the whole period (2001-2010), was noted positive investment trend. Exception was 2009, when started global economic crisis that obviously had impact on Serbia too. Considering that total volume of investments was decreased, fact that in 2009 investments in Metropolitan area Belgrade- Novi Sad were higher, talks about increased share of observed region in total national investments, what can represent positive impulse for further investment activities.

However, in this case it did not happen, because the share of investment in researched area within the total Republic investments in 2010 was decreased (for 4.59%), (Table 2.).

**Table 2.** *Spatial distribution of totally realized investments\* on the territory of Metropolitan area Belgrade-Novı Sad, (in 000 RSD)*

Year	Unit of measure	Territory	
		Republic of Serbia**	Metropolitan area Belgrade-Novı Sad
2001.	RSD	55,188,399.00	26,348,469.00
	%	100.00	42.31
2002.	RSD	102,860,663.00	49,903,466.00
	%	100.00	48.52
2003.	RSD	115,662,223.00	59,551,991.00
	%	100.00	51.49
2004.	RSD	152,929,464.00	81,721,217.00
	%	100.00	53.44
2005.	RSD	163,549,507.00	99,783,262.00
	%	100.00	61.01
2006.	RSD	291,845,739.00	164,440,955.00
	%	100.00	56.35
2007.	RSD	398,990,391.00	239,815,515.00
	%	100.00	60.11
2008.	RSD	472,746,680.00	287,312,769.00
	%	100.00	60.78
2009.	RSD	369,438,089.00	225,899,778.00
	%	100.00	61.15
2010.	RSD	425,400,001.00	240,589,911.00
	%	100.00	56.56

\* *Investments in fixed assets of social sector (which includes also cooperative, mixed and public form of ownership) in current prices.*

\*\* *Data for Kosovo and Metohija are not included.*

**Source:** *Opštine u Republici Srbiji 2000-2010, RZS, Beograd; Investicije u Republici Srbiji 2000-2009, RZS, Beograd.*

Share of investments in Metropolitan area Belgrade-Novı Sad in total investments in Serbia range in interval 42.31-61.15%. The highest amount of investments in mentioned area is achieved in 2008 (287.31 billion RSD), when its share within the investments on Republic level was 60.78%. On the other hand, the lowest amount of investments in Metropolitan area Belgrade-Novı Sad was achieved in 2001 (26.35 billion RSD), when its share within the total sum of investments at national level was 42.31%.

Calculating an average annual growth rate, it come to fact that achieved rate at the Republic level (25.47%) was lower than this one achieved at the level of Metropolitan area Belgrade-Novı Sad (27.86%). According to that, it can be concluded that stronger investment activity caused higher economy growth in observed territory in compare to national economy development.

This can be a fact that points out on greater employment, as well as, in average, much more new jobs created within the economy of researched area in compare to Republic level.

*Level of investments on the territory of the Carpathians'* had expressed oscillations, although it has positive trend (Table 3.).

**Table 3.** *Spatial distribution of totally realized investments\* in the Carpathians' (in 000 RSD)*

Year	Unit of measure	Territory	
		Republic of Serbia **	The Carpathians'
2001.	RSD	55,188,399.00	300,205.00
	%	100.00	0.54
2002.	RSD	102,860,663.00	528,014.00
	%	100.00	0.51
2003.	RSD	115,662,223.00	679,740.00
	%	100.00	0.59
2004.	RSD	152,929,464.00	158,221.00
	%	100.00	0.10
2005.	RSD	163,549,507.00	1,076,931.00
	%	100.00	0.66
2006.	RSD	291,845,739.00	888,768.00
	%	100.00	0.30
2007.	RSD	398,990,391.00	1,521,450.00
	%	100.00	0.38
2008.	RSD	472,746,680.00	1,554,482.00
	%	100.00	0.33
2009.	RSD	369,438,089.00	2,393,200.00
	%	100.00	0.65
2010.	RSD	425,400,001.00	4,278,232.00
	%	100.00	1.11

\* *Investments in fixed assets of social sector (which includes also cooperative, mixed and public form of ownership) in current prices.*

\*\* *Data for Kosovo and Metohija are not included.*

**Source:** *Opštine u Republici Srbiji 2000-2010, RZS, Beograd; Investicije u Republici Srbiji 2000-2009, RZS, Beograd.*

Share of investments in observed region within the complete investments in the Republic is extremely low, and was in range from 158.22 million RSD (in 2004) to 4.28 billion RSD (in 2010), or in other words it had share of just 0.10-1.11% in total investments at national level. Increase of mentioned share during the last year, was primarily consequence of greater investment growth in the Carpathians' than the increase of investment activity in the Republic of Serbia.

Calculation of average annual growth rates showed that rate achieved at national level (25.47%) was lower than rate achieved at the level of the Carpathians (34.34%). So, it can be concluded that better investment activity caused higher economy growth in Carpathian region in compare to economic development of compete Serbia. This fact points to currently higher employment, as well as much more created new jobs in Carpathians' economy in compare to Republic level.

### **Investment as a factor of agricultural development**

Realization of national plan and program for national economy recovery and respect of market economy postulates, in large extent is conditioned by realization of more efficient and profitable production, productivity and optimal use of production factors. That is one of the ways which national agriculture has to pass within the reform process and preparing of Serbia for accession to the EU.

Having in mind the process of EU enlargement and perspectives that are arising for Serbia, it is evident that in future development of agricultural husbandries in Serbia investment activities will have crucial place. Investments play a key role in realization of goals and priorities of agricultural and rural development, primarily as a driving tool for quantitative and qualitative growth of agricultural production factors and total production, as well as for creation of conditions for a better life in the village (*Subi , 2010.*).

At this stage, growth of investments in agriculture represents a condition of its technical and technological modernization, and ultimately one of the conditions of stability of whole national economy. Without adequate volume and structure of investments, it cannot be expected growth of fixed assets and permanent working capital, creation of new jobs, better performances of used equipment, higher productivity, diversification of production, etc., as on regional (agricultural and rural) level, as well as on national level (*Subi , 2007.*).

Among activities that are applied in rural areas, important place takes production of goods necessary for human nutrition, as for textile, food and other industries. These activities are directly connected to the economic function of agriculture. They affect the growth of competitiveness and significantly contribute to sustainable development.

By observing of realized investments in agriculture, it can be noticed that they showed increase tendency within the period 2001-2008 on the Republic level,



although existed discontinuity in 2003. Unfortunately, in period 2009-2010 this indicator had exclusively decrease tendency.

*At the level of Upper Danube region* (during the complete period 2001-2010), indicator was noticeably varied as well as its share within the investments in agriculture, forestry and water management of the Republic of Serbia (2.94-27.01%). Consequently, it can be concluded that sector of agriculture does not give equitable contribution to maintaining of economic-social safeness of population in Upper Danube region, but it represents for sure unused possibility for development of this territory (Table 4.).

**Table 4.** *Spatial distribution of realized investments\* in agriculture\*\* of Upper Danube region (in 000 RSD)*

Year	Unit of measure	Territory	
		Republic of Serbia***	Upper Danube region
2001.	RSD	3,146,845.00	332,921.00
	%	100.00	10.58
2002.	RSD	4,947,895.00	417,074.00
	%	100.00	8.43
2003.	RSD	3,260,612.00	157,466.00
	%	100.00	4.83
2004.	RSD	3,721,166.00	807,667.00
	%	100.00	21.70
2005.	RSD	5,028,799.00	329,957.00
	%	100.00	6.56
2006.	RSD	13,016,883.00	681,551.00
	%	100.00	5.24
2007.	RSD	14,111,462.00	713,588.00
	%	100.00	5.06
2008.	RSD	21,099,194.00	5,698,310.00
	%	100.00	27.01
2009.	RSD	13,203,838.00	383,768.00
	%	100.00	2.94
2010.	RSD	9,219,328.00	656,937.00
	%	100.00	7.13

\* *Investments in fixed assets of social sector (which includes also cooperative, mixed and public form of ownership) in current prices.*

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

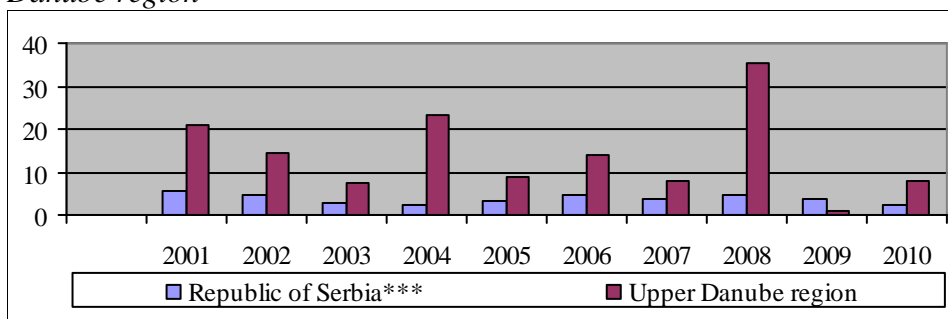
\*\*\**Data for Kosovo and Metohija are not included.*

**Source:** *Opštine u Republici Srbiji 2000-2010, RZS, Beograd; Investicije u Republici Srbiji 2000-2009, RZS, Beograd.*

Average annual growth rates of investments realized in agriculture at both levels are positive. Specifically, average annual growth rate, on the Republic territory is above 12%, while at Upper Danube region level is under 8%.

In period 2001-2010, on area of the Republic of Serbia, share of agricultural investments in totally realized investments varied from year to year, so the highest share of this sector was in 2001 (5.7%), while the lowest was achieved in 2010 (2.17%). In same period, share of investments in agriculture in total sum of realized investments on the territory of Upper Danube region was in interval of 5.24 – 35.22% (Graph 1.).

**Graph 1.** *Share of agriculture\* in total realized investments\*\* in Upper Danube region*



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

\*\* *Investments in fixed assets of social sector (which includes also cooperative, mixed and public form of ownership) in current prices.*

\*\*\* *Data for Kosovo and Metohija are not included.*

**Source:** *Opštine u Republici Srbiji 2000-2010, RZS, Beograd; Investicije u Republici Srbiji 2000-2009, RZS, Beograd.*

So, there are significant variation in share of agricultural in total investments in Upper Danube region (the lowest in 2009 and the highest in 2008), what is confirmed by high value of standard deviation. After insight into value of variation coefficient, it can be concluded that there are some bigger deviations at the level of mentioned territory. Despite this fact, it can be seen that the area of Upper Danube region, in term of share of agriculture in totally realized investments, is significantly above Republic level.

*On the level of Metropolitan area Belgrade-Novi Sad*, during the period 2001-2008, indicator had constant growth, while in time interval 2009-2010, it permanently decreased. On other hand, through complete observed period 2001-2010, it was noticeable variation of its share in agricultural investments

on Republic level (17.82-52.88%). According to that, it can be concluded that sector of agriculture does not give balanced contribution to maintaining of economic-social safeness of population whose live in researched area, but represents unused potential for its further development (Table 5.).

**Table 5.** *Spatial distribution of realized investments\* in agriculture\*\* of Metropolitan area Belgrade-Novı Sad (in 000 RSD)*

Year	Unit of measure	Territory	
		Republic of Serbia ***	Metropolitan area Belgrade-Novı Sad
2001.	RSD	3,146,845.00	560,691.00
	%	100.00	17.82
2002.	RSD	4,947,895.00	1,180,848.00
	%	100.00	23.87
2003.	RSD	3,260,612.00	1,324,056.00
	%	100.00	40.61
2004.	RSD	3,721,166.00	1,360,565.00
	%	100.00	36.56
2005.	RSD	5,028,799.00	2,218,088.00
	%	100.00	45.36
2006.	RSD	13,016,883.00	3,957,844.00
	%	100.00	30.41
2007.	RSD	14,111,462.00	7,462,489.00
	%	100.00	52.88
2008.	RSD	21,099,194.00	8,451,244.00
	%	100.00	40.05
2009.	RSD	13,203,838.00	5,184,492.00
	%	100.00	39.27
2010.	RSD	9,219,328.00	2,510,740.00
	%	100.00	27.23

\* *Investments in fixed assets of social sector (which includes also cooperative, mixed and public form of ownership) in current prices.*

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

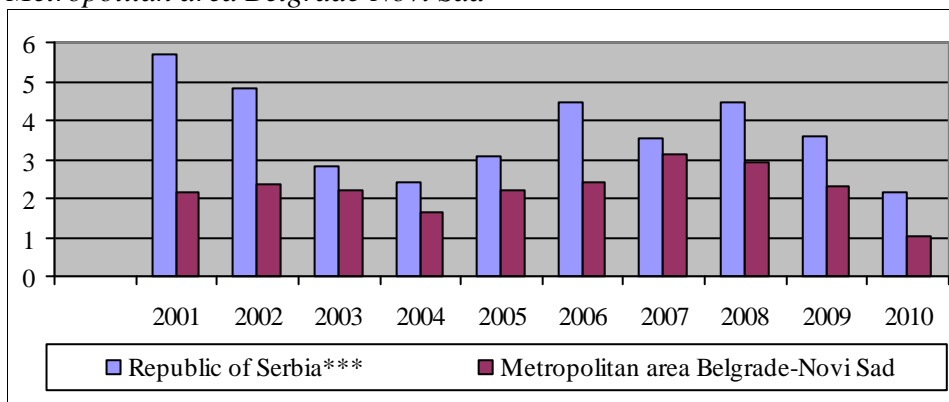
\*\*\* *Data for Kosovo and Metohija are not included.*

**Source:** *Opštine u Republici Srbiji 2000-2010, RZS, Beograd; Investicije u Republici Srbiji 2000-2009, RZS, Beograd.*

Average annual growth rates of investments realized in agriculture at both levels are positive. Specifically, average annual growth rate, on the Republic territory is above 12%, while on Metropolitan area Belgrade-Novı Sad is above 18%.

In period 2001-2010, share of investments in agriculture in total sum of realized investments on the observed territory was in interval of 1.04 – 3.11% (Graph 2.).

**Graph 2.** *Share of agriculture\* in total realized investments\*\* in Metropolitan area Belgrade- Novi Sad*



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

\*\* *Investments in fixed assets of social sector (which includes also cooperative, mixed and public form of ownership) in current prices.*

\*\*\* *Data for Kosovo and Metohija are not included.*

**Source:** *Opštine u Republici Srbiji 2000-2010, RZS, Beograd; Investicije u Republici Srbiji 2000-2009, RZS, Beograd.*

There are obvious variations in share of agricultural in total investments (the highest in 2007 and the lowest in 2010), what is confirmed by high value of standard deviation. After insight into value of variation coefficient, it can be concluded that there are not to big deviations at the level of mentioned territory. On the other hand, it can be easily noticed that this area, according the share of agriculture in total sum of realized investments, is significantly under Republic level.

***On the level of the Carpathians'*** (during the complete period 2001-2010), achieved investments in agriculture had notable variation, just as their share in investment in agriculture at Republic level (0.04-1.49%). In certain years (2003, 2006, as well as period 2009-2010), investment activity was completely absent, so on that way it abridged contribution of agriculture in maintaining of economic-social safeness of citizens in the Carpathians'. But beside that fact, sector of agriculture is unused possibility for sustainable development of researched area (Table 6.).

**Table 6.** *Spatial distribution of realized investments\* in agriculture\*\*of the Carpathians' (in 000 RSD)*

Year	Unit of measure	Territory	
		Republic of Serbia***	The Carpathians'
2001.	RSD	3,146,845.00	13,817.00
	%	100.00	0.44
2002.	RSD	4,947,895.00	74,068.00
	%	100.00	1.49
2003.	RSD	3,260,612.00	0.00
	%	100.00	0.00
2004.	RSD	3,721,166.00	1,506.00
	%	100.00	0.04
2005.	RSD	5,028,799.00	14,162.00
	%	100.00	0.28
2006.	RSD	13,016,883.00	0.00
	%	100.00	0.00
2007.	RSD	14,111,462.00	55,735.00
	%	100.00	0.39
2008.	RSD	21,099,194.00	12,566.00
	%	100.00	0.06
2009.	RSD	13,203,838.00	0.00
	%	100.00	0.00
2010.	RSD	9,219,328.00	0.00
	%	100.00	0.00

\* *Investments in fixed assets of social sector (which includes also cooperative, mixed and public form of ownership) in current prices.*

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

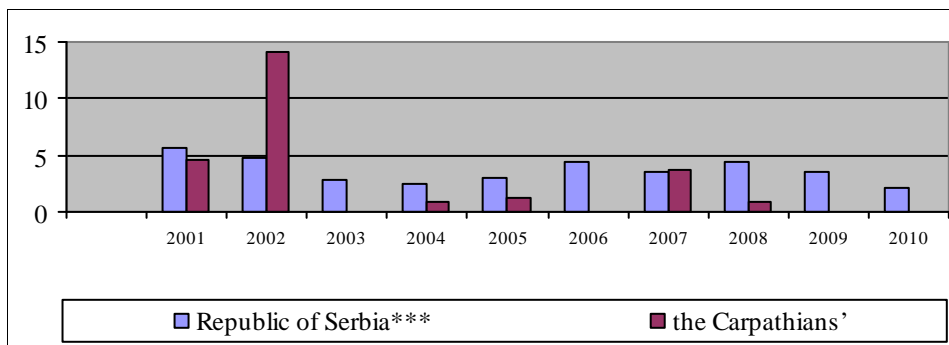
\*\*\**Data for Kosovo and Metohija are not included.*

**Source:** *Opštine u Republici Srbiji 2000-2010, RZS, Beograd; Investicije u Republici Srbiji 2000-2009, RZS, Beograd.*

Average annual growth rates of investments realized in agriculture are not positive at all levels. Specifically, average annual growth rate, on the territory of Serbia is positive and has value of 12.69%, while on level of the Carpathians' this indicator has negative value (-1.35%).

In period 2001-2010, share of investments in agriculture in total sum of realized investments on the territory of the Carpathians' in Serbia was in interval of 0.81 – 14.03% (Graph 3.).

**Graph 3.** *Share of agriculture\* in total realized investments\*\* on the territory of the Carpathians'*



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

\*\* *Investments in fixed assets of social sector (which includes also cooperative, mixed and public form of ownership) in current prices.*

\*\*\* *Data for Kosovo and Metohija are not included.*

**Source:** *Opštine u Republici Srbiji 2000-2010, RZS, Beograd; Investicije u Republici Srbiji 2000-2009, RZS, Beograd.*

Therefore, there are obvious variation in share of agricultural in total investments in the Carpathians' (the lowest in 2008 and the highest in 2002), what is confirmed by high value of standard deviation. By insight into value of variation coefficient, it can be concluded that there are bigger deviations at the level of this territory. Beside that fact, it can be seen that area of the Carpathians', according to share of agriculture in total sum of realized investments, is in average above national level (1.89:1).

### **Evaluation of realized investments in agriculture**

For assessment of realized investments in agriculture within the Danube Basin in Serbia (Upper Danube region, Metropolitan area Belgrade-Novı Sad and the Carpathians'), next indicators are used (*Cvijanovi et al, 2007*):

- Realized investments in agriculture per agriculturalist;
- Realized investments in agriculture per active agriculturalist;
- Realized investments in agriculture per unit of agricultural surface;
- Realized investments in agriculture per unit of cultivated surface;
- Realized investments in agriculture per unit of arable surface.

For more realistic evaluation of realized investments in agriculture on researched territory are analyzed data that refer as to Danube Basin, as well as to Republic at whole. It should bear in mind that all data/indicators were

not available for same year for all territories, what could indicate that their comparison is not logical. However, comparison was done, based on assumption that there were no big differences, so that similar results will be gained in case that all data for 2010 were available.

According to gained results for *Upper Danube region*, it can be concluded that from all observed indicators maximum value was achieved at indicator - realized investments in agriculture per active agriculturalist, while minimal value had indicator - realized investments in agriculture per unit of agricultural surface (Republic of Serbia, 3.61:1; Upper Danube region, 9.35:1), (Table 7.).

**Table 7.** *Evaluation of achieved investments\* in agriculture\*\* in Upper Danube region*

Indicator	UM	Territory	
		Serbia***	Upper Danube
Realized investments in agriculture per agriculturalist****	RSD	6,055.79	1,748.44
Realized investments in agriculture per active agriculturalist****	RSD	9,349.13	30,519.09
Realized investments in agriculture per unit of agricultural surface*****	RSD	2,590.69	3,263.94
Realized investments in agriculture per unit of cultivated surface*****	RSD	3,097.34	3,305.16
Realized investments in agriculture per unit of arable surface*****	RSD	3,999.95	3,594.75

\* *Investments in fixed assets of social sector (which includes also cooperative, mixed and public form of ownership) in current prices.*

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

\*\*\* *Data for Kosovo and Metohija are not included.*

\*\*\*\* *Data for 2002.*

\*\*\*\*\* *Data for 2010.*

**Source:** *Opštine u Republici Srbiji 2000-2010, RZS, Beograd; Popis stanovništva 2002 (Ukupno i poljoprivredno stanovništvo u Srbiji), RZS, Beograd; Investicije u Republici Srbiji 2000-2009, RZS, Beograd.*

Gained results imply that all indicators at the level of Upper Danube region have much higher values than indicators at national level.

Analysis indicates that concerning first indicator territory of Upper Danube region is significantly behind the Republic level. But, in terms of other indicators (primarily - *realized investments in agriculture per active*

*agriculturalists*), results from observed territory are in average better than national level.

From the standpoint of realized investments in agriculture evaluation, it can be concluded that in average agriculture has higher contribution to sustainable rural development in the zone of Upper Danube than on Republic level.

After reconsidering of gained results for **Metropolitan area Belgrade-*Novi Sad***, it can be concluded that from all observed indicators maximum value was achieved at indicator - realized investments in agriculture per active agriculturalist, while minimal value had indicator - realized investments in agriculture per unit of agricultural surface (Republic of Serbia, 3.61:1; Metropolitan area Belgrade-*Novi Sad*, 4.97:1), (Table 8.).

**Table 8.** *Evaluation of achieved investments\* in agriculture\*\* in Metropolitan area Belgrade-*Novi Sad**

Indicator	UM	Territory	
		Serbia***	Metropolitan area Belgrade - Novi Sad
Realized investments in agriculture per agriculturalist****	RSD	6,055.79	14,114.00
Realized investments in agriculture per active agriculturalist****	RSD	9,349.13	23,156.06
Realized investments in agriculture per unit of agricultural surface*****	RSD	2,590.69	4,656.62
Realized investments in agriculture per unit of cultivated surface*****	RSD	3,097.34	4,933.53
Realized investments in agriculture per unit of arable surface*****	RSD	3,999.95	7,656.26

\* *Investments in fixed assets of social sector (which includes also cooperative, mixed and public form of ownership) in current prices.*

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

\*\*\* *Data for Kosovo and Metohija are not included.*

\*\*\*\* *Data for 2002.*

\*\*\*\*\* *Data for 2010.*

**Source:** *Opštine u Republici Srbiji 2000-2010, RZS, Beograd; Popis stanovništva 2002 (Ukupno i poljoprivredno stanovništvo u Srbiji), RZS, Beograd; Investicije u Republici Srbiji 2000-2009, RZS, Beograd.*

According to gained results it can be concluded that indicators at the level of Metropolitan area Belgrade-*Novi Sad* have significantly higher values than indicators at Republic level.



Also, analysis of obtained results indicates that concerning third and fourth indicator territory of Republic of Serbia is not far behind the Metropolitan area Belgrade-*Novi Sad*. However, in terms of other indicators (primarily - *realized investments in agriculture per active agriculturalists*), results from observed territory are much above national level.

So, after evaluation of realized investments in agriculture, it can be concluded that contribution of agriculture to sustainable rural development is notably higher in Metropolitan area Belgrade-*Novi Sad* than in complete Republic.

According to gained results for *the Carpathians*, it can be concluded that from all observed indicators maximum value was achieved at indicator - realized investments in agriculture per active agriculturalist, while minimal value had indicator - realized investments in agriculture per unit of agricultural surface (Republic of Serbia, 2.26:1; Carpathians, 73.44:1), (Table 9.).

**Table 9.** Evaluation of achieved investments\* in agriculture\*\* in Carpathians

Indicator	UM	Territory	
		Serbia***	Carpathians
Realized investments in agriculture per agriculturalist****	RSD	6.055,79	3.802,06
Realized investments in agriculture per active agriculturalist****	RSD	9.349,13	5.455,40
Realized investments in agriculture per unit of agricultural surface*****	RSD	4.142,63	74,28
Realized investments in agriculture per unit of cultivated surface*****	RSD	4.996,59	90,16
Realized investments in agriculture per unit of arable surface*****	RSD	6.389,65	146,15

\* Investments in fixed assets of social sector (which includes also cooperative, mixed and public form of ownership) in current prices.

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

\*\*\* Data for Kosovo and Metohija are not included.

\*\*\*\* Data for 2002.

\*\*\*\*\* Data for 2008.

**Source:** *Opštine u Republici Srbiji 2000-2010, RZS, Beograd; Popis stanovništva 2002 (Ukupno i poljoprivredno stanovništvo u Srbiji), RZS, Beograd; Investicije u Republici Srbiji 2000-2009, RZS, Beograd.*

Gained results imply that all indicators at the level of Carpathians have much lower values than indicators at Republic level.

Conducted analysis indicates that concerning first and second indicator territory of Carpathians has no significant deviations in compare to Republic level. But, in terms of other indicators, results from observed territory are drastically poorer in compare to national level.

It is evident that from the standpoint of realized investments in agriculture, it can be concluded that contribution of agriculture to sustainable rural development in Carpathians is on very low level in compare to whole Republic.

### **Conclusion**

Reconsidering all results gained during the analysis of realized investments in agriculture on the territory of Danube Basin in Republic of Serbia, next observations can be underlined:

- poorer investment activity affected lower economic growth of Upper Danube zone in compare to economic development of whole Republic of Serbia;
- stronger investment activity caused higher economic growth of Metropolitan area Belgrade–Novi Sad in compare to national economic development;
- better investment activity caused higher economic growth of the Carpathians in compare to economic development of whole Republic;
- according to share of agriculture in sum of realized investments, area of Upper Danube region is significantly above the national level;
- according to share of agriculture in sum of realized investments, Metropolitan area Belgrade–Novi Sad is significantly under the national level;
- according to share of agriculture in sum of realized investments, area of Carpathians is, in average, above the national level;
- assessment of realized investments in agriculture indicates that in average contribution of agriculture to sustainable rural development is bigger in the Upper Danube region than on the national level;
- assessment of realized investments in agriculture within the Metropolitan area Belgrade–Novi Sad implies a fact that contribution of agriculture to sustainable rural development in mentioned area is bigger than in whole Republic;

- by insight into the assessment of realized investments in agriculture of the Carpathians can be noticed very small contribution of agriculture to sustainable rural development of observed area in compare to whole Republic of Serbia;

Besides underlined observations, there should be left a room for finding and appliance of new methods for analysis of realized investments in agriculture on macroeconomic level, as well as possibility for free choice in realization of sustainable agricultural and rural development concept (*Subi et al, 2012.*).

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