

# STRATEGIC PLANNING AS SUPPORT TO DEVELOPING AGRICULTURE OF THE CITY OF NOVI SAD<sup>1</sup>

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## Abstract

*The paper examines the factors of the development of agriculture in the city of Novi Sad, and accordingly defines the development priorities. The aim at the research is to analyze the real possibilities for improving the situation in this field through the SWOT analysis. The analysis focuses on: demographic characteristics and trends in rural settlements, trends in the development of agriculture in the city of Novi Sad, agro-technical equipment, storage and finishing capacities, as well as development priorities in the agriculture of the city. The results of the research show that the improvement on the competitiveness of the agricultural sector in the city of Novi Sad requires the implementation of adequate strategic measures and projects in the field of improvement to human potential, higher level of processing of agricultural products and better agricultural equipment of agricultural producers. New rural development policies are focused precisely on defining effective mechanisms to ensure coordination of the development of agriculture and other activities in rural areas, in accordance with the principles of sustainable development, with the aim of improving the living standard and quality of life of the population.*

**Key words:** *strategic planning, agriculture, agro-technical equipment, storage and finishing capacities, development priorities.*

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## Introduction

Today, the development of agriculture more than ever relies on the results of scientific research and their practical application. Research in the field of agriculture is carried out by a wide network of state institutes, institutes and universities and is mainly aimed at improving production. Perspectives emerging from the EU enlargement process for our country and the importance of capital investments in sustainable development implied the need for an analysis of the economic effectiveness of investments in agriculture (Subic et al, 2012, p. 781-791). Namely, economic research, farm level, market to study, or economic policy analysis and assessment is poorly developed, and the profitability of agriculture and food industry should be improved by supporting appropriate research and applying the results obtained (Mihailovic et al, 2009, pp. 413- 421 ) .

Agriculture is the basis of economic activities (Popovic, Grujic, 2015, pp. 513-525). Commence changes in the field of agriculture, although under the influence of many factors that have depreciation effect on them, they have assumed the character of irreversible processes. The reform of the agricultural sector can hardly be restored to the starting position, but rather about its hectic pace and instruments of agrarian policy, which often need to establish a balance between diametrically opposed targets. Under such conditions, the agrarian of Serbia has an exceptional place and role in the overall economic development of the country, especially in the process of harmonizing economic mechanisms for the realization of certain social goals, in the implementation of reforms and transition, and above all on mitigating the impact on the global economic and financial crisis, which seriously threatens the recovery and the development of the economy.

Serbia has great potential for the agricultural sector, which is not fully exploited (Simonović et al, 2012, pp. 535-544). With adequate strategic planning, agriculture can make a significant contribution to the economic development of the country. Due to its connection and influence on other sectors, it is extremely important to the development of Serbia, since it employs, directly or indirectly, a large number of people, participates in a significant part in foreign trade, provides food safety to the citizens, and contributes to rural development and ecological balance. The achievement of agrarian competitiveness requires macroeconomic management to change the basic elements of agricultural development strategies, first of

all, towards the creation of sustainable agricultural systems, whose growth is driven by knowledge and innovation, as well as in the direction of market development and agricultural product chains and agricultural clusters. Namely, an important cluster contribution is reflected off the creation of a sustainable competitive advantage of cluster members, as well as regions in which the cluster operates.

### **Methodology and data sources**

In order to realize the research task, all available sources of information will be used: 1) Official local statistics, i.e. the data onto the Republic Bureau of Statistics; 2) National and municipal strategies and development documents from a specific area; 3) Research of the authors of the thematic field; 4) Research carried out by the Institute of Agricultural Economics and its associates in the previous period.

In the realization of the research task, which refers to the assessment of agricultural potentials and defining development priorities to the city of Novi Sad, the analysis of secondary data (primarily the Agricultural Census from 2012) will be used, spatial analysis of relevant variables as well as focus based on stakeholder groups interested in the agriculture and food industry of the city of Novi Sad.

Also, a valuable support for the diagnosis of the condition in this area will be SWOT analysis, based on which the development priorities and strategic directions of action will be formulated. A combination of these methods of research can provide a more reliable answer to the key issues that arise from the framework of the agricultural analysis and development priorities of the city of Novi Sad.

### **Results and Discussion**

The network of the town of Novi Sad in the scope of the plan includes Novi Sad with Petrovaradin and Sremska Kamenica, then settlements of pronounced urban characteristics of Futog, Veternik and Kać and settlements: Begeč, Budisava, Bukovac, Čenej, Kisač, Kovilj, Rumenka, Ledinci, Stari Ledinci and Stepanovicevo (Official Gazette of the City of Novi Sad, No. 11/2012). According to the Spatial Plan of Novi Sad, Novi Sad, in addition to the Belgrade agglomeration, represents the city center of the highest degree of urbanization in the Republic of Serbia. It is located on the Danube, an important European river, almost in the central

part of Vojvodina, on important road, rail and water corridors (X, VII). Apart from being the administrative center of the City of Novi Sad, the center of the South Bačka District and the capital of the AP Vojvodina, and according to the Spatial plan of the Republic of Serbia and the center of the functional urban area (FUP) of international significance and one of the key factors in the development of a wider gravitational area. Recognition and spatial definition of functional urban areas (FUPs) and its centers in the area of AP Vojvodina is of great importance for the establishment of a more balanced development of the Province, but also for the affirmation of functionally urban areas as a carrier and driver of development in this area (Regional Spatial Plan of the Autonomous Vojvodina by 2020, December, 2011).

Indicators of agricultural development. According to the data onto the Program for support for implementation of agricultural policy and rural development policy in the territory of the City of Novi Sad for 2017, the relevant indicators of agricultural development are as follows:

1. Agricultural production of the area of the City in 2016 took place on the available surface of arable agricultural land of 50,000 ha, on which about 80% of the area are produced cereals, about 6.2% of vegetables, about 3.1% of fruit, while under other crops it is about 10.7% of the area.
2. The structure of total fruit production dominates the cultivation of some important fruit crops with perennial plantations of apples, pears, plums and apricots, which totals an area of 877 ha. Also, very favorable climatic conditions, especially on the slopes of Fruška Gora, exist on growing and cultivating vines.
3. According to the latest data, in 2016 the number of cattle was 5,754; number of pigs 87,753; number of sheep and goats 7,069; number of horses 405; number of poultry 635,938 and number of bee hives 14,052. Livestock breeding is in decline, there are several large livestock farms (Focus Group, City Administration for the Economy of the City of Novi Sad, 2017);
4. Agricultural planting production in the area of the City can be viewed through the achieved average yields in 2016 in the City area. Thus the total realized yield of the most important seed crops in 2016 is: for wheat 48,477 tons; for barley 2,496 tons; for corn 181,324 tons; for soybeans 48,623.2 tons; for sunflower 1,766.4 tons; for sugar beet 82,180. tons and for rapeseed 2,279.2 tons.
5. In vegetable production, the highest yield in tons was achieved in the production of potatoes (total 39,735 tons) and cabbage (total

48,490 tons). Futoški cabbage as a product is branded with a certificate, and 60% of the production is exported to the countries of the region.

6. In fruit growing, plants are especially distinguished: apple, pear, plum, apricot, and in winegrowing vines. The achieved total yield in 2016 is especially significant in the production of apples, 26,120 tons, plum production, 840 tons, and peaches 1,360 tons.
7. With regard to average yields on the territory of the City in 2016, they are among the two most important crop-grown crops: wheat 6.5 ton / ha and corn 11.0 ton / ha. In the two most important vegetable crops in the City area in 2016, the average yields are: for potatoes 45.0 tons / ha and for cabbage 65.0 tons / ha.
8. Based on the above, it can be seen that there are general conditions for agricultural production, as well as organic agricultural production, which is carried out in the area of the City on the surface of 55.88 ha.

*Demographic characteristics and trends in rural settlements.* According to the Census of Population, Households and Flats in 1981, 1991, 2002 and 2011, the number of inhabitants in Novi Sad has a tendency to grow. According to the latest Census of Population, Households and Dwellings from 2011, in Novi Sad there was an increase in the number of inhabitants by 14.1% (or 42,331 persons), compared to 2002 (AP Vojvodina Development Program 2014-2020, p. 33). On the other hand, the number of inhabitants in rural and peri-urban settlements (so-called "other" settlements) recorded a slight decrease (-0.9%) only in the period 2002-2011 (Table 1). If migration movements are observed in the districts of AP Vojvodina, it is noted that the migration balance is negative in all districts, except in South Bačka, where a positive migration balance of 1,407 persons was recorded (Demographic Statistics in the Republic of Serbia, 2011). This result is largely the result of the highly sensitive migration balance of the city of Novi Sad, which amounts to 1,900 persons. At the same time, the characteristic of the Novi Sad and Vojvodina areas area significant change in the demographic structures of rural areas, which as a result has the "relocation of population reproduction" from rural to urban areas (Program for support of agricultural policy and rural development policy in the territory of the city of Novi Sad for 2017 year, p. 2).

**Table 1.** *Number of inhabitants in settlements in the city of Novi Sad in the period 1981-2011.*

Settlements	Number of inhabitants						
	1981	1991	2002	2011	1991/ 1981	2002/ 1991	2011/ 2002
City Novi Sad	250,138	265,464	299,294	341,625	6.1	12.7	14.1
Novi Sad	227,920	241,262	268,067	307,760	5.9	11.1	14.8
- City	178,437	189,234	210,238	250,439	6.0	11.0	19.1
-Other settlements	49,483	52,028	57,829	57,321	5.1	11.1	-0.9
Begec	2,717	2,827	3,335	3,325	4.0	18.0	-0.3
Budisava	3,502	3,685	3,825	3,656	5.2	3.8	-4.4
Vetrenik	15,803	16,711	18,375	17,454	5.7	10.0	-5.0
Kac	8,551	9,755	11,166	11,740	14.8	14.5	5.1
Kisac	6,220	5,850	5,471	5,091	-5.9	-6.5	-6.9
Kovilj	5,279	5,242	5,599	5,414	-0.7	6.8	-3.3
Novi Sad	163,773	173,186	191,656	231,798	5.7	10.6	20.9
Rumenka	3,629	4,361	5,729	6,495	20.1	31.4	13.4
Stepanovicevo	2,096	2,020	2,214	2,021	-3.6	9.6	-8.7
Futog	14,664	16,048	18,582	18,641	9.4	15.8	0.3
Cenej	1,686	1,577	2,115	2,125	-6.5	34.1	1.7
Petrovaradin	22,218	24,202	31,227	33,865	8.9	29.0	8.4
- City	17,870	19,240	25,178	27,083	7.7	30.9	7.6
-Other settlements	4,348	4,962	6,049	6,782	14.1	21.9	12.1
Bukovac	2,641	3,040	3,585	3,936	15.1	17.9	9.8
Ledinci	1,137	1,280	1,641	1,912	12.6	28.2	16.5
Petrovaradin	10,338	11,285	13,973	14,810	9.2	23.8	5.9
Sremska Kamenica	7,532	7,955	11,205	12,273	5.6	40.9	9.5
Stari Ledinci	570	642	823	934	12.6	28.2	13.5

**Source:** *Census of Population, Households and Flats in Serbia for Relevant Years, Serbian Statistical Office.*

The educational structure of the population at the city of Novi Sad is more favorable compared to the level of the Republic of Serbia. Comparison of the urban settlement and other settlements in the city of Novi Sad reveals a more unfavorable educational structure of the population in rural and per urban settlements (Table 2). According to the educational structure of the population of the city older than 15 years, based on the "2011 census",

it can be said that in the city area about 53% of the population with secondary education, about 20% is a part of the population with higher education, about 7% part of the population with higher education, about 14% is a part of the population with elementary education, about 1.5% is a part of the population without school education, and 4.5% is a part of the population with incomplete basic education (Program for support of agricultural policy and rural policy development in the territory city of Novi Sad for 2017, page 2).

**Table 2.** *Educational structure of the population / <sup>1</sup> in R. Serbia and the city of Novi Sad, 2011. (%)*

	No school and incomplete elementary education	Primary education	High school	Higher and higher education
Republic Serbia	13.7	20.8	48.9	16.2
-City Settlements	7.0	16.8	53.4	23.2
-Other Settlements	23.4	27.7	42.4	6.1
<i>City Novi Sad</i>	6.0	13.6	53.1	27.0
- City Settlements	4.7	11.8	52.5	30.7
- Other Settlements	11.5	21.7	55.9	10.7
Novi Sad	5.9	13.4	52.7	27.7
- City Settlements	4.6	11.5	52.0	31.6
- Other Settlements	11.6	21.8	55.8	10.6
Petrovaradin	6.5	15.5	57.2	20.6
- City Settlements	5.6	14.2	57.2	22.8
- Other Settlements	10.4	20.7	57.1	11.7

**Source:** *Census of Population, Households and Dwellings in Serbia 2011, RZS.*

*<sup>1</sup>Population aged 15 and over.*

The age structure of the population of Novi Sad (Table 3) is more favorable compared to the level of the Republic of Serbia and at the level of the urban settlement and at the level of other settlements. Only in the urban settlement of Novi Sad the share of the population older than 65 years is slightly higher than the republican average of 15.6%. However, according to the population projections, the old population in the planned area will increase by about 50% in the period from 2010 to 2027 and will constitute about one fifth of the total population, and in the planning period the city of Novi Sad will face increasing problems of care for the elderly (Spatial Plan of the City of Novi Sad, Official Gazette of the City of Novi Sad, No. 11, 2012, p. 203).

**Table 3.** *Structure of the population in the Republic of Serbia and the city of Novi Sad by age.*

	Population under 15 years old (%)	Population older than 65 years (%)	Aging index <sup>1</sup>	Average age (year)
Republic Serbia	14.3	17.4	124.6	42.2
- City Settlements	14.5	15.6	114.1	41.3
- Other Settlements	13.9	20.1	140.4	43.6
<i>City Novi Sad</i>	15.0	14.3	102.4	40.0
- City Settlements	14.9	15.9	104.0	40.0
- Other Settlements	15.9	13.4	92.5	39.9
Novi Sad	15.1	14.0	100.5	39.8
- City Settlements	14.9	14.2	102.8	39.8
- Other Settlements	16.0	13.2	91.2	39.8
Petrovaradin	14.4	15.0	113.1	41.2
- City Settlements	14.3	15.3	115.6	41.3
- Other Settlements	14.9	14.0	103.7	40.7

**Source:** *Census of Population, Households and Dwellings in Serbia 2011, RZS.*

<sup>1</sup> *The ratio of the number of old (60 and more years) and young (0-19 years) population.*

Although there is a slight increase in the number of inhabitants, it is noticeable that the biological quality in the population will be weaker due to the increased participation of the old population. Consequently, the problems of depopulation and aging of the population will be mitigated by the measures of population policy, which will be determined and implemented by the state, and the city of Novi Sad will, within its competencies and possibilities, take measures that stimulate birth and birth rate in order to alleviate the negative tendencies of the demographic Development (Official Gazette of the City of Novi Sad, No. 11/2012, p. 203).

Agro technical equipment: machinery and equipment. The agriculture of Serbia in recent decades portrays the differentiation and stratification of the rural population, which is the main bearer of agricultural production. There are producers that have greater economic power, which enables them to follow modern technological achievements, both in terms of using new equipment and implementing new technologies. In the second group, they are poorer, without sufficient resources for a serious change, and such a large majority of Serbia (Radivojević, 2014). Problems that farmers in Novi Sad have in the field of agricultural mechanization are similar to those problems that farmers have in the whole territory of



Serbia, and the most important are the following: 1) the structure and exploitation life of existing mechanization in some sectors of agricultural production is unfavorable; 2) unfavorable bank loans for the purchase of new machinery; 3) undeveloped so-called machine rings. According to the 2012 Agricultural Census data (Book 1) in Novi Sad, 532 one-axle tractors were recorded; 3,781 two-axle tractors and 348 combine (Table 4).

**Table 4.** *Spatial Distribution of Agricultural Machinery in Novi Sad, 2012*

	<b>One-axle tractors</b>	<b>Two axle tractors</b>	<b>Universal combine harvesters</b>	<b>Forage harvesters</b>	<b>Other combines</b>
City Novi Sad	532	3,781	300	29	19
Novi Sad	358	3,536	289	28	19
Begec	13	221	P	P	P
Budisava	18	161	21	P	P
Vetemik	26	97	7	P	P
Kac	25	421	33	7	P
Kisac	37	719	72	P	11
Kovilj	36	556	45	4	P
Novi Sad	61	172	13	P	P
Rumenka	32	214	18	P	P
Stepanovicevo	6	205	14	P	P
Futog	42	438	8	5	P
Cenej	62	332	56	P	P
Petrovaradin	174	245	11	P	P
Bukovac	36	127	7	P	P
Ledinci	30	33	P	P	P
Petrovaradin	55	41	P	P	P
Sr. Kamenica	42	31	P	P	P
Stari Ledinci	11	13	P	P	P

**Source:** *Agricultural Census 2012, Agricultural machinery, level of settlement;*  
**Note:** *According to the Law on Official Statistics and Protection of Individual Data, some data in tables for settlements with three or less of the three farms are hidden (shown with the letter "P")*

The following condition was registered for the following machines: 547 maize harvesters, 3,094 plows, 1,115 plates, 1,607 harrows, 1,700 seeders, 201 rotating harrow, 1,532 minerals fertilizer spreaders, 108 manure spreaders, 1,216 seeders, 1,800 sprayers, 3,803 trailers and 485 lawnmowers. On average, every agricultural holding in Novi Sad has 4.2 units of connecting machines and equipment (3.9 average for the Republic of Serbia), which is somewhat more favorable than the average of Serbia. On the other hand, spatial distribution of agricultural machinery (Agricultural List 2012, Agricultural Machinery, level of settlements) showed that the settlements of the largest agro-technical equipment are as follows: Kisač, Kovilj, Futog, Kać and Bukovac.

At the same time, the least agro-technical equipment has Veternik, Ledinci and Stari Ledinci (Agricultural List 2012, Agricultural machinery, level of settlement). For other settlements it can be said that they have average agro-technical equipment with a certain oscillation of the number of agricultural mechanization in settlements. Agricultural producers need to strengthen cooperation through the formation of machine rings. Machine rings to provide many benefits of their members and allow farmers to split into two basic categories: (1) those who receive the service and (2) those that provide them.

This differentiation resulted in a provider of services that are narrowly specialized only for individual operations, so that the quality of services provided is at the highest level. Consequently, by maximizing the use of machinery, the price of such services is lower, and recipients of services can address other problems in their agricultural production (inputs, placement of products).

Creating machine rings would result in more efficient production due to more rational use of existing resources, creating conditions for farmers that specialize in the provision of services to grow into private entrepreneurs, which is the dominant source of income, which in particular relates to expensive agricultural machinery.

Storage and finishing facilities and facilities. The storage and finishing capacities for the area of the city of Novi Sad were analyzed based on the data onto the Census of Agriculture 2012, the level of the settlement (Table 5).

**Table 5. Storage and finishing capacities in agriculture in Novi Sad, 2012**

Storage and finishing capacities	Total Number	Own capacity	Used capacity
Corn bins	3,380	148,143 m <sup>3</sup>	66,833 m <sup>3</sup>
Ambari	206	23,006 m <sup>3</sup>	8,948 m <sup>3</sup>
Silos	60	147,341 t	130,720 t
Dryers	18	8,378 m <sup>3</sup>	361 m <sup>3</sup>
Facilities for silage	29	15,022 m <sup>3</sup>	13,110 m <sup>3</sup>
Facilities for storing agricultural machinery and equipment	2,451	184,293 m <sup>2</sup>	175,728 m <sup>2</sup>
refrigerators	29	22,905 m <sup>3</sup>	22,590 m <sup>3</sup>
Facilities for the accommodation of cattle	893	10,212 number of places	3,883 number of places
Facilities for housing pigs	5,362	77,743 number of places	46,826 number of places
Facilities for hen laying	2,140	553,522 number of places	379,103 number of places
Facilities for accommodation of other livestock	746	103,488 number of places	100,101 number of places
Machines for calibration, vacuuming and packaging	20	18	0

**Source:** *Agricultural Census 2012 (Book 2)*;

*Silos, barns, corn.* There are 28 agricultural farms with silos, as well as 60 facilities with a total capacity of 147,341 t. The largest capacities of the silo have the following settlements: Čenej (106,225 t), Novi Sad (18,091 t) and Kovilj (19,890 t). As far as barns, 183 agricultural holdings own ammunition (total number of barns 206). The largest total capacities are located in Ledinci (11,219 m<sup>3</sup>), followed by the settlements Kać (2,930 m<sup>3</sup>), Sremska Kamenica (2,055 m<sup>3</sup>) and Kovilj (1,821 m<sup>3</sup>). Koshers for corn has 3,380, and most of them are in the settlements Kisač, Kovilj, Kać, Stepanovićevo. *Objects in animal husbandry.* Cattle accommodation - 893; capacity: 10,212, number of seats; Objects for pig accommodation - 5,362; capacity: 77,743, number of seats; Objects for henhouse accommodation - 2,140; capacity: 553,522, number of seats; Silage facilities are listed in 23 agricultural holdings, total capacity 15,022 m<sup>3</sup> (total number of these facilities is 29). The largest total capacity of facilities is located in Kovilj (9,581 m<sup>3</sup>), followed by Kisač (3,307 m<sup>3</sup>), Rumenka (1,050 m<sup>3</sup>), Futog (796 m<sup>3</sup>).

*Refrigerators.* According to the 2012 Agricultural Census (Keserović and associates, 2015), of the total number of refrigerators in Serbia, most of them are in Smederevo, Topola, Subotica, Grocka and Čačak, typical "fruit trees". The capacities are dominated by Subotica (63,441 m<sup>3</sup>), Arilje municipality (58,335 m<sup>3</sup>) and the city of Smederevo (58,306 m<sup>3</sup>). While the capacities in Arilje are intended for the storage of frozen raspberries, in other mentioned cities / municipalities it is mainly about keeping fresh fruit (apples, pears, peaches, etc.).

The number of refrigerators in the city of Novi Sad is 29, and around 73% of the total refrigerator capacity of agricultural holdings is registered in the settlement Begeč (16,690 m<sup>3</sup>). Next are the Rumenka settlements (2,788 m<sup>3</sup>), Kać (1,593 m<sup>3</sup>), Futog (1,102 m<sup>3</sup>), Čenej (640 m<sup>3</sup>), Novi Sad (74 m<sup>3</sup>) and others.

*Dryers* are recorded in 18 agricultural holdings, with a total capacity of 8,378 m<sup>3</sup>. Analysis of the spatial distribution of drying capacity indicates that as much as 96% of the total capacity is located in Kovilj (8,023 m<sup>3</sup>). The remaining drying capacities are located in settlements: Čenej (114 m<sup>3</sup>), Veternik (100 m<sup>3</sup>), Futog (75 m<sup>3</sup>), Kisač (33 m<sup>3</sup>) and Begač (15 m<sup>3</sup>).

*The machine for calibration, vacuuming and packaging* has a total of 20, with 8 of them older than 10 years. The capacities are located in the following settlements: Begeč (3), Kać (1), Kisač (2), Novi Sad (2), Rumenka (1), Stepaničevo (3), Futog (5) and Čenej (3).

Most of the area of the city of Novi Sad is arable agricultural land, where the most important is cultivation of crops, with conditions for the development of organic agriculture, production of vegetables and fruits, and due to the significant raw material base and the development of the food industry (Official Gazette of Novi Sad, number 64/2015). In accordance with such potentials, although the storage and finishing capacities of Novi Sad exist, it must be in the field of further construction, purchase and expansion of these capacities, as this increases the quality of products and facilitates placement.

*Formulation of strategic goals and main activities.* Dynamic conditions of life and business strategic planning make it necessary to manage local development (Official Gazette of the City of Novi Sad, No. 64/2015). The overall objective of local agricultural development should be directed towards improving the material and social status of the local population,

promoting an integral rural development model based on linking rural with the city economy and diversifying economic activities in the countryside.

Accordingly, the following results should be expected: increased competitiveness, more complete use of all resources, harmonization of agricultural production, increase to employment and income of the population, while respecting the principles of sustainability. Namely, a sustainable society is a society that has the ability to maintain balance between economic, social and ecological processes (Saric et al., 2013, pp. 77-90). Achieving these results requires the real creation of a "SWOT" matrix (Table 6).

The optimal strategy for the development of the agriculture and food industry of the city of Novi Sad in the "SWOT" environment is a mini - maxi strategy that implies minimizing weaknesses and threats while at the same time maximizing power and opportunities in the environment such as regional integration, education and advising in agribusiness and etc.

**Table 6.** *SWOT matrix of the agriculture sector in Novi Sad*

STRENGHT	WEAKNESSES
<ul style="list-style-type: none"> <li>• Novi Sad, in addition to the Belgrade agglomeration, represents the city center of the highest degree of urbanization in the Republic of Serbia;</li> <li>• It is located on the Danube, an important European river, almost in the central part of Vojvodina, on important road, rail and water corridors (X, VII);</li> <li>• High-income migration balance of the city of Novi Sad;</li> <li>• The educational structure of the population in Novi Sad is more favorable compared to the level of the Republic of Serbia;</li> <li>• On average, every agricultural holding in Novi Sad has 4.2 units of connecting machines and equipment (3.9 average for the Republic of Serbia), which is somewhat more favorable than the average of Serbia;</li> <li>• The largest part of the city of Novi Sad makes for arable agricultural land, where the most important is cultivation of crops;</li> </ul>	<ul style="list-style-type: none"> <li>• One of the conflicts in the area is the devastation of high quality agricultural land and its conversion;</li> <li>• The cities of AP Vojvodina, primarily Novi Sad, are facing constant traffic overabundance,</li> <li>• "Moving the reproduction of the population" from village to urban environments;</li> <li>• Poor educational structure of the population in rural and periurban settlements;</li> <li>• The least agro-technical equipment has Veternik, Ledinci and Stari Ledinci;</li> <li>• Insufficient cooperation between farmers on the use of joint machinery;</li> <li>• Although the storage and finishing capacities in Novi Sad exist, it must be done in the field of further construction, purchase and expansion of these capacities, as this increases the quality of products and facilitates placement;</li> </ul>

CHANCES	THRUST
<ul style="list-style-type: none"> <li>• The main advantage of urbanization in Vojvodina is the optimal hierarchy of urban settlements;</li> <li>• Vojvodina has physically arranged urban settlements and cities, developed identity, based on the affirmation of natural and cultural values;</li> <li>• Regional integration;</li> <li>• Institutional approximation of Serbia to the European Union;</li> <li>• Creating a stimulating population policy;</li> <li>• Accelerated replacement of existing mechanization is the only way to stabilize it and increase yields per unit area;</li> <li>• Implementation of the production program based on the application of modern technology;</li> <li>• Free Trade Agreement with the Russian Federation;</li> <li>• Favorable conditions for external trade in goods from the field of agricultural food sector;</li> <li>• Support the development of new storage and finishing capacities according to the available strategic raw materials and market requirements;</li> </ul>	<ul style="list-style-type: none"> <li>• Urban transition marked by polarization, the development of urban hotspots with a pronounced displacement of the population into cities;</li> <li>• The problems of the settlement in Vojvodina are floods and landslides;</li> <li>• Demographic emptying of rural settlements;</li> <li>• Aging population;</li> <li>• Depopulation trend;</li> <li>• Inadequate internal and external migration;</li> <li>• Differentiation and stratification of the rural population;</li> <li>• There is a significant number of poor producers, without sufficient resources to monitor modern technological achievements;</li> <li>• Structure and exploitation life of existing mechanization is unfavorable;</li> <li>• Globalization of trade in food products and increasing competition in international markets;</li> </ul>

**Source:** *Research by author, 2017.*

The following *strategic goal* can be formulated in agricultural enterprises and large agricultural systems in the City of Novi Sad: *"Improving competitiveness and market operations in the agricultural sector, contributing to the sustainable development of rural areas, protecting the environment and rare natural resources"*.

In accordance with the strategic objective, specific specific objectives and measures for their implementation can be formulated.

*"Specific Objective 1. Improving Human Potential"*. In order to improve the competitiveness of the agricultural sector in the city of Novi Sad, it is necessary to implement adequate measures and projects in the field of human resources development. This specific objective would be realized through the following measures: 1) creating a program for the development of local advisory services and the employment of local advisers; 2) efficient organization of professional agricultural service; 3) institutionalization of advisory policy; formation of a national association

of consultants; 4) planned and systematic education of advisers; 5) transfer of contemporary scientific and professional achievements; 6) education, training and seminars for the manufacturer; 7) greater incentives from the agrarian budget for young farmers; 8) development of manifestations in the field of agriculture.

*"Specific objective 2. Institutional and legal support for the development of peri-urban agriculture, harmonized with EU practice".* The main directions of the activities are: 1) Developing a system of budgetary and credit support for the development of agriculture; 2) Developing mechanisms for monitoring implementation of incentives and control of results; 3) Improve coordination and synchronization in the implementation of support measures between different levels of state administration (republic, city, municipality); 4) Strengthening the capacities of the local community in the field of development of peri-urban agriculture; 5) Improvement of legal regulations in agriculture; 6) Reorganization and improvement of existing institutions in agriculture.

*"Specific objective 3. Support the development of new processing capacities according to the available strategic raw materials and market requirements."* Productivity improvements can be achieved through investments in production (adoption of new knowledge and technologies, capacity building and modernization of machines and equipment, introduction of irrigation and drainage systems), marketing and introduction of a quality system in line with EU standards. This specific objective would be realized through the following measures: 1) tax support for investments in small plants for the processing of high quality products for export; 2) improvement of the production agricultural structure; 3) creating machine rings in order to achieve more efficient production due to more rational use of existing resources; 4) construction, purchase and expansion of warehouse and dredging capacities, as this increases the quality of products and facilitates placement; 5) encouraging association and integration).

## **Conclusion**

The vision of the agriculture of the city of Novi Sad involves the development of more propitious and more competitive agriculture composed of commercial and family farms dealing exclusively with agriculture and / or dealing with agriculture in terms of an additional source of income. Realizing agrarian competitiveness requires

macroeconomic management to change the basic elements of agricultural development strategies, first of all, towards the creation of sustainable agricultural systems, whose growth is driven by knowledge and innovation, as well as in the direction of market development and agricultural product chains.

Competitive and market-oriented agricultural sector of the city of Novi Sad must base its development on the entrepreneurial approach to employment and education in intensive agricultural production. Such development is based on the natural resources of the area and is in line with new technologies and market trends, closely linked to standardized production capacities, with the extension of environmental standards and the affirmation of rural areas. All this is supported by adequate agricultural policy and financial resources and harmonized institutional and legal frameworks towards good business practice in the European Union.

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