

**IMPACT OF CHANGES IN ECONOMIC STRUCTURE
ON THE TERRITORIAL AND DEMOGRAPHIC GROWTH
OF SETTLEMENTS IN THE POST-SOCIALIST PERIOD,
THE EXAMPLE OF NIŠAVSKI ADMINISTRATIVE DISTRICT**

UDC 711.4:314.18(497.11)

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Abstract. *This paper analyzes impact of the changed socio-political and economical conditions in post-socialist period, to spatial, demographic and functional transformation of settlements in the case of Nišavski Administrative District. Based on census data and data from the current planning documents, a comparative analysis of interdependence between land use and demographic trends by the type of settlements is conducted in order to examine the extent to which modern principles of sustainability and urban sprawl control had been implemented. Considering that development takes place under the influence of multitude of factors changes in the economic structure were also analyzed. In the theoretical part of paper, the origin and development of the idea for restriction of urban sprawl was presented, along with an overview of the most important provisions of international conventions.*

Key words: *Spatial and urban planning, land use, urban sprawl*

1. INTRODUCTION

Settlement formation is carried out under the influence of complex development and integration processes on one side, and environmental conditions on the other, and it cannot be understood without having a wider picture of the neighboring settlements and centers, as well as socio-economic and natural-geographic advantages and limitations. Considering the fact that the overview of the whole range of physical and functional factors that influence formation of settlement structures would be a too cumbersome task, the focus of this paper will be on the interdependence of economic and demographic trends and physical growth of settlements in the post-socialist period. The settlements of the Nišavski Administrative

Received July 4, 2017 / Accepted September 6, 2017

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District will serve as an example to analyze how the altered socio-political circumstances have affected transformation of settlements, the extent to which their growth has been influenced by demographic or socio-economic factors, as well as the influence of ecological factors which were considered during the planning process of settlement development.

The cumbersome manufacturing systems were the main carriers of development in the socialist period which generated the rapid development and growth of urban areas, while in rural areas there was a strong migration of population into the cities and the abandonment of large areas of fertile agricultural soil. As a result of the transition to a market economy at the end of the last century, the decentralization of the economy have started, that caused closure of large industrial enterprises, and the accelerated development of the tertiary economy sector.

Structural changes in the world economy have additionally complicated the transition and caused a drop in production, employment and consequent discontinuity in the development of settlements. Problems have manifested in the form of urban sprawl, abandonment of urban cores, increased distance of residential areas from the administrative and business centers, forming of the satellite settlements, abandonment of industrial zones, and so on. Planning documentation frequently complied with the current state of affairs, whereas construction was conducted in accordance with contemporary requirements. In many cases, construction was spontaneous and haphazard, especially so in suburban areas along the major transportation routes, resulting in urban sprawl, often not taking natural resources into consideration. That trend for expansion of the build-up areas in relation to the agricultural is particularly evident in the new generation of spatial and urban planning documents.

2. DEVELOPMENT OF PARADIGMS OF SUSTAINABLE DEVELOPMENT

Numerous consequences of uncontrolled urbanization contributed to the development of environmental awareness, and the approach to development which focused on the unlimited use of land, believing that somewhere there would always be space suitable for expansion, gave way to the development that recognizes the ultimate extent of natural resources, and the consequences of their unrestricted use. Social needs and environmental requirements began to be observed simultaneously with the economic development and developed an awareness that it is necessary to balance economic development with its social and environmental aspects.

In an effort to correct the negative aspects of these phenomena, a number of conventions and directives for controlling the development of settlements was adopted. Declaration of the United Nations Conference on the human environment from 1972 (Stockholm Declaration, 1972) was one of the first initiatives for solving problems caused by rapid consumption of resources, both through pollution in the developed world, and the population explosion in developing countries. At the United Nations Conference on Environment and Development "Earth Summit" of 1992, sustainable development was formally adopted as a standard by the international community, recognizing that "expanding human requirements and economic activities are placing ever-increasing pressures on land resources, creating competition and conflicts that are resulting in suboptimal use of land and land resources" (Mojović, Đ. et al., 2011, p. 20). The result of the conference was enormous and involved a set of global conventions on climate change and action program for the promotion of sustainability,

called "Agenda 21" (UNCED, 1992), which states that an integrated approach to planning and management of land resources, popularly known as land use planning, is essential for achieving this goal.

The currently prevailing tendency in spatial and urban planning is creation of a sustainable system in which development takes place within the available capacity of the environment. According to the Law on Strategic Environmental Assessment, sustainable development is defined as a "development that meets the needs of present generations without jeopardizing the possibilities of future generations to satisfy their needs". Sustainable development is evolving through three components: economy, social and environment. It is based on the assumption that only through balanced actions it can be possible to simultaneously manage human resources, achieve economic development, and avoid inequality that endangers the social side of society, justice and security.

Sustainability as a key criterion for assessing the quality of spatial development represents a complex system of relations to nature and the environment, resources and activities based on their use, protected values, traditions, identity and specific socio-cultural characteristics, aiming to preserve and enhance the quality of the environment. In development planning, it is imperative that impacts on the environment are kept in the range in which the environment can absorb them, so social needs and environmental requirements have been viewed upon alongside economic development. A modern planning approach requires observation of the "entire society as a compound and dynamic unity because urban space should meet the complex and never static needs of its residents" (Marković, D. 2010).

In urban areas these principles are manifested as smart growth that concentrates growth in compact walkable urban centers to avoid sprawl. This approach to the development of urban areas is conceived as an alternative to urban sprawl – the extensive and discontinuous occupation of the undeveloped land that leaves serious consequences for the environment and the ecology, as well as in the social and economic areas. Compact settlements, transport availability, mixed land uses, reuse, and healthy communities are its basic principles.

3. RESULTS ANALYSIS

In response to the economic, technological and social impacts, processes of transformation that are reflected on the structure of the settlement are taking place on a daily basis. These changes are largely determined by their character and position, so this chapter will examine the correlation between demographic trends of the total and agricultural population, a predominant occupation of the population, economic development and growth of urban and rural settlements, taking the settlements of the Niš Administrative District as an example.

Nišavski Administrative District is characterized by highly favorable geographical position at the crossroads of industrial development axes of I and II level, and international traffic corridors of E-75 and E-80. It includes the City of Niš, that from 2006 functions as a community of five city municipalities (the Medijana, Palilula, Pantelej, Crveni Krst and Niška Banja), and the municipalities of Aleksinac, Gadzin Han, Doljevac, Merošina, Razanj and Svrljig.

For research purposes, and in order to adjust to the census data, settlements are differentiated on the municipal centers and other - rural settlements. According to the official census methodology, there are no urban areas in the municipalities of Gadzin Han, Doljevac,

Merošina, and Ražanj. Therefore, the settlements stipulated as the centers of local governments by the urban plans were displayed as the urban settlements, for the purpose of differentiation between the municipal centers and other settlements. Such settlements are: for the municipality of Gadzin Han the settlement of Gadzin Han, for the municipality of Doljevac, settlements of Doljevac, Kočane and Orljane, for the municipality of Merošina, settlements of Merošina and Brest, and for the municipality of Ražanj, settlement Ražanj, in tables all marked as “Urban*”.

The analysis data were used from the 2002 and 2011 Census, as well as municipal annuals (Municipalities in Serbia 2002-2010 and Municipalities and Regions in Serbia 2011-2012), while the current planning documentation that regulates land use and manner of spatial development was used as an indicator of the contemporary necessities for construction area. For municipal centers, which are in accordance to the Law on Planning and Construction elaborated through master plans and general regulation plans, as well as for the other settlements that have been subject of urban elaboration by lower level plans, data from these plans were used. For other settlements as a data source for the surface of the construction area, along with data from municipal annuals the data from spatial plans of local governments in the areas where they apply on the basis of schematic views of settlements development were used.

3.1. Demographic developments

The analysis of demographic developments was based primarily on the 2002 and 2011 census results, but given that the data on the number of agricultural population in the 2011 census had not been published by the settlements, but only by municipalities and regions, they were obtained from the Statistical Office of the Republic of Serbia by the special request (Application No. 9485).

However, changes in the methodology of gathering and classification of census data have hampered to some extent analysis of the results. For example, there is no absolute comparability of results in the areas of the economically active population and in the classification of households according to the income sources between the 2002 census and 2011 census. In addition, according to the methodology of the 2002 census, data on the number of population and number of households in urban areas of the City of Niš, without municipality of Niška Banja, were shown collectively.

Demographic trends had different characteristics within the Nišavski Administrative District. Until the seventies of the last century, most rural settlements had a positive population growth, but primarily due to the emigration of the part of reproductive-age population, a trend of population decline emerged. At the same time the economic structure of Niš emerged on the foundations of traditional, labor-intensive activities (metal, tobacco, textiles, brick, milling, wood processing, etc.) has created an employment opportunities for large redundant workforce from agriculture, thus opening pathways for an intense mechanical population growth (Table 1).

After that period, the process of extension of urban influences from the city core to suburban areas has begun, which due to lack of space and essential infrastructure in the urban tissue, became a new destination for migrants. This phenomenon has caused their demographic growth followed by intensive housing construction and socio-economic transformation expressed through the reduction of participation of agricultural population in the total and active population (Table 2).

Table 1 Number of agricultural population by municipalities and settlement type

Administrative District <i>City-municipality</i> Settlement type	Agricultural population		Its share in total population %		Active agr. population that conducts activity		Its share in total agr. population %		Share of agr. population in total pop. Ratio%	Share of the active agr. population in total agr. pop. 2002/2011
	2002	2011	2002	2011	2002	2011	2002	2011		
Nišavski A. D.	381757	13229	7,94	3,52	21745	7455	71,72	56,35	-55,67	-21,43
Urban	215456	825	0,65	0,39	654	324	46,98	39,27	-40,00	-16,41
Other	166301	12404	17,40	7,60	21091	7131	72,91	57,49	-56,32	-21,15
The City of Niš	250518	1596	2,05	0,61	3669	673	71,58	42,17	-70,24	-41,09
Urban	180068	253	0,29	0,13	191	73	36,31	28,85	-55,17	-20,55
Other	70450	1277	6,53	1,76	3478	578	75,61	45,26	-73,05	-40,14
Medijana	-	98	-	0,11	-	18	-	18,37	-	-
Urban	-	94	-	0,12	-	16	-	17,02	-	-
Other	27	4	0,61	0,09	19	2	70,37	50,00	-85,25	-28,95
Palilula	-	493	-	0,67	-	162	-	32,86	-	-
Urban	-	64	-	0,12	-	17	-	26,56	-	-
Other	1055	429	6,00	2,23	697	145	66,07	33,80	-62,83	-48,84
Pantelej	-	344	-	0,64	-	169	-	49,13	-	-
Urban	-	53	-	0,15	-	20	-	37,74	-	-
Other	1463	291	9,90	1,55	1188	149	81,20	51,20	-84,34	-36,95
Crveni Krst	-	518	-	1,60	-	278	-	53,67	-	-
Urban	-	31	-	0,25	-	18	-	58,06	-	-
Other	1719	487	6,98	2,46	1310	260	76,21	53,39	-64,76	-29,94
Niška Banja	373	77	2,43	0,52	286	24	84,97	31,17	-78,60	-63,32
Urban	37	11	0,83	0,25	22	2	50,00	18,18	-69,88	-63,64
Other	336	66	3,08	0,64	264	22	87,88	33,33	-79,22	-62,07
Aleksinac	11679	5142	20,22	9,91	7978	2668	96,92	51,89	-50,99	-46,46
Urban	208	84	1,12	0,47	107	25	37,38	29,76	-58,04	-20,39
Other	11471	5058	29,33	14,93	7871	2643	97,73	52,25	-49,10	-46,54
Gadžin Han	1458	860	13,93	10,25	1159	647	99,05	75,23	-26,42	-24,05
Urban*	29	10	2,33	0,82	19	8	94,74	80,00	-64,81	-15,56
Other	1429	850	15,50	11,86	1140	639	99,12	75,18	-23,48	-24,15
Doljevac	1507	781	7,70	4,23	927	318	96,33	40,72	-45,06	-57,73
Urban*	239	259	4,95	5,65	140	126	95,00	48,65	14,14	-48,79
Other	1268	522	8,61	3,76	787	192	96,57	36,78	-56,33	-61,91
Merošina	3141	1777	21,21	12,72	2144	997	96,60	56,11	-40,03	-41,92
Urban*	144	77	10,03	5,30	86	30	56,51	38,96	-47,16	-31,06
Other	2997	1700	22,40	13,53	2058	967	96,60	56,88	-39,60	-41,12
Ražanj	3708	2353	32,62	25,72	2707	1685	96,93	71,61	-21,15	-26,12
Urban*	96	28	6,25	2,25	61	4	83,61	14,29	-64,00	-82,91
Other	3612	2325	36,74	29,41	2646	1681	97,24	72,30	-19,95	-25,65
Svrljig	3702	786	21,42	5,52	3161	489	98,77	62,21	-74,23	-37,02
Urban	150	114	1,95	1,51	50	58	76,00	50,88	-22,56	-33,05
Other	3552	672	37,08	10,04	3111	431	99,13	64,14	-72,92	-35,30

Source: 2002 Census of Population, Households and Dwellings in the Republic of Serbia, Population - Number of agricultural population, Statistical Office of the Republic of Serbia, ISBN 86-84433-20-3, 2011 Census of Population, Households and Dwellings in the Republic of Serbia, Statistical Office of the Republic of Serbia, Application nr. 9485

The City of Niš and its suburbs had a significant demographic growth, until the last decade of the twentieth century, when due to the transition and unstable economic situation, for the first time in modern history negative demographic movements were recorded.

Table 2 Comparative overview of number of population

Administrative District City – municipality Settlement type	Number of population								Ratio%
	1948	1953	1961	1971	1981	1991	2002	2011	2002/ 2011
Nišavski A. D.	283842	303482	327367	363292	394110	396043	381757	376319	-1,42
Urban	63056	75423	101408	152888	192981	214529	215109	221582	3,01
Other	220786	228059	225999	210431	201129	181514	166648	154737	-7,15
The City of Niš	109280	122100	148354	195362	232563	248086	250518	260237	3,89
Urban	48206	57757	80703	127395	161180	179828	180068	187544	4,15
Other	61074	64343	67651	67967	71383	68258	70450	72693	3,18
Medijana	22907	27323	38232	60627	77252	86626	87405	85969	-1,64
Urban	22339	26728	37177	58692	74307	82961	82953	81327	-1,96
Other	568	595	1055	1935	2945	3665	4452	4642	4,27
Palilula	26969	30517	37876	52277	64465	71035	72165	73801	2,26
Urban	14702	17591	24468	38628	48906	54602	54596	54597	0,00
Other	12267	12926	13408	13649	15559	16433	17569	19204	9,14
Pantelejš	25774	27631	31851	38132	44151	41595	42137	53486	26,93
Urban	6756	8084	11244	17752	22475	25093	25090	34724	38,40
Other	19018	19547	20607	20380	21676	16502	17047	18762	10,06
Crveni Krst	21224	23757	26134	29829	32034	33881	33452	32301	-3,44
Urban	3499	4186	5823	9192	11638	12993	12992	12516	-3,66
Other	17725	19571	20311	20637	20396	20888	20460	19785	-3,30
Niška Banja	12406	12872	14261	14497	14661	14949	15359	14680	-4,42
Urban	910	1168	1991	3131	3854	4179	4437	4380	-1,28
Other	11496	11704	12270	11366	10807	10770	10922	10300	-5,69
Aleksinac	61002	64344	67200	66082	67286	63844	57749	51863	-10,19
Urban	6871	8939	11289	13968	17661	18675	18638	17978	-3,54
Other	54131	55405	55911	52114	49625	45169	39111	33885	-13,37
Gadžin Han	26380	26182	23965	19974	16281	12990	10464	8389	-19,83
Urban*	931	951	879	903	997	1131	1245	1223	-1,77
Other	25449	25231	23086	19071	15284	11859	9219	7166	-22,27
Doljevac	17641	18825	19860	20228	20663	20662	19561	18463	-5,61
Urban*	3329	3549	3908	4381	4673	4847	4828	4587	-4,99
Other	14312	15276	15992	15874	15990	15815	14733	13876	-5,88
Merošina	18326	19469	18899	18028	17489	16139	14812	13968	-5,70
Urban*	1093	1196	1258	1370	1546	1552	1435	1452	1,18
Other	17233	18273	17641	16658	15943	14587	13377	12516	-6,44
Ražanj	18931	19623	18829	17113	15586	13582	11369	9150	-19,52
Urban*	1008	1102	1159	1308	1331	1370	1537	1245	-19,00
Other	17923	18521	17670	15805	14255	12212	9832	7905	-19,6
Svrljig	32282	32939	30260	26505	24242	20740	17284	14249	-17,56
Urban	1618	1929	2212	3563	5593	7126	7358	7553	2,65
Other	30664	31010	28048	22942	18649	13614	9926	6696	-32,54

Source: 2011 Census of Population, Households and Dwellings in the Republic of Serbia, Comparative overview of the number of population in 1948, 1953, 1961, 1971, 1981, 1991, 2002 and 2011, Statistical Office of the Republic of Serbia, ISBN 978-86-6161-109-4

Table 2, shows changes in agricultural population, its share in total population, as well as a share of active agricultural population that conducts activity in the total agricultural population, by municipalities and settlement types according to census results from year 2002 and 2011.

A slight increase in the agricultural population that is not accompanied by an increase in the total is noticeable, while the share of it declined at the regional level for 55,67%, both in urban settlements (-40,00%) and in the other settlements (-56,21%) where agriculture has traditionally been dominant source of income, and this trend is most pronounced in the City of Niš, considering its distinctly urban character.

3.2. Land use

Land area is one of the key elements of the environment and an important resource that is particularly threatened by human activities, such as: expansion of settlements, industrial, mining, energy and transport facilities, water erosion, wind erosion, soil salinization, loss of nutrients, chemical pollution from bio sources, mechanical compaction of soil during the processing of heavy machinery, water logging of land, floods, loss of fertility, etc. (National strategy on sustainable development of the Republic of Serbia, 2008).

In this chapter, the analysis will be focused on the impact of settlement expansion through the comparison of changes in surface of the built-up areas of settlements, as well as changes in surface of the agricultural area and its share in total area, with a focus on the period from year of 2002 to 2011, that preceded the preparation of the current planning documents.

According to the Law on Planning and Construction, built-up area represents built and regulated part of the settlement, as well as the undeveloped part of an area scheduled for protection, renovation or construction of buildings, and the town is defined as built, functionally unified space, in which conditions are provided for life and work of people and which is satisfying the mutual needs of inhabitants with urban elements.

Table 3 The balance of basic land uses in the area of Nišavski Administrative District

Teritorial unit	Existing use/ Planned use	Agricultural land (km ²)	Forests and forestry land (km ²)	Other, infertile land (km ²)	Total area (km ²)
Nišavski	Existing use	1733	726	268	2727
	Planned use	1610	782	335	2727
Administrative District	Difference	-123	56	67	0
	Ratio (%)	-7,10	7,71	25,00	0,00

Source: Regional spatial plan for the area of Nišavski, Toplički, and Pirotski Administrative District

Analyzing the balance of surfaces at the level of Nišavski Administrative District (Table 3) a trend of increase of building land presented together with other infertile land by 25% can be observed, mainly at the expense of the agricultural land, that in the regional plan of covered local government units had decreased by 123%.

Table 4 Agricultural area by cities and municipalities - farms, businesses and cooperatives

Administrative District City-municipality	Agricultural land area (ha)										Ratio (%) 2002/2011
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	
Nišavski A. D.	173823	173861	173633	173473	174011	173742	173733	173310	173003	173788	-0,02
The City of Niš	36996	37000	36827	36749	37837	37972	37951	37869	37836	37642	1,75
Medijana	30193	30169	30034	705	796	796	992	785	932	889	26,10
Palilula				7395	7456	7571	7363	7510	7377	7362	-0,45
Pantelej				9157	9280	9277	9282	9258	9255	9237	0,83
Crveni Krst				12697	12893	12920	12926	12906	12867	12905	1,64
Niška Banja	6803	6831	6793	6795	7412	7408	7388	7410	7405	7249	6,56
Aleksinac	45429	45539	45463	45408	45117	45022	45189	45197	45075	45416	-0,29
Gadžin Han	18228	18213	18201	18137	17849	17577	17638	17241	17085	17631	-3,27
Doljevac	9143	9126	9161	9161	9214	9184	9184	9184	9186	9527	4,20
Merošina	14703	14618	14685	14670	14718	14759	14686	14618	14620	14578	-0,85
Ražanj	17092	17099	17084	17083	17158	17113	17056	17093	17082	17071	-0,12
Svrljig	32232	32266	32212	32265	32118	32115	32029	32108	32119	31923	-0,96

Source: Municipalities in Serbia, 2002-2010, and Municipalities and regions in Serbia, 2011-2012, Statistical Office of the Republic of Serbia

Table 5 The share of agricultural land total area - farms, businesses and cooperatives

Administrative District City-municipality	The share of agricultural land area in total area (%)										Ratio (%) 2002/2011
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	
Nišavski A. D.	63,7	63,7	63,7	63,8	63,8	63,7	63,7	63,6	63,5	63,8	0,2
The City of Niš	62,0	62,0	61,7	61,7	61,7	63,7	63,7	63,4	63,4	63,1	1,8
Medijana				44,1	44,1	16,2	16,2	2,6	3,1	3,0	-93,2
Palilula	66,8	66,8	66,8	71,0	71,0	83,2	83,2	60,6	59,5	62,9	-11,41
Pantelej				61,4	61,4	67,7	67,7	65,2	65,2	65,0	5,86
Crveni Krst				69,9	69,9	74,3	74,3	70,9	70,7	70,9	1,43
Niška Banja	46,9	46,9	46,8	47,0	47,0	51,1	51,1	50,8	50,7	50,0	6,61
Aleksinac	64,1	64,1	64,7	64,3	64,0	63,9	63,9	64,6	64,4	64,9	1,25
Gadžin Han	56,0	56,0	56,0	56,2	54,9	54,1	54,1	53,0	72,7	54,2	-3,21
Doljevac	76,0	76,0	76,3	75,6	76,1	75,9	75,9	75,9	75,9	78,7	3,55
Merošina	76,2	76,2	76,1	76,0	76,3	76,5	76,5	75,7	75,8	75,5	-0,92
Ražanj	59,2	59,2	59,1	59,6	59,6	59,2	59,2	59,1	59,1	59,1	-0,17
Svrljig	65,0	65,0	64,7	65,1	65,1	64,6	64,6	64,5	64,5	64,1	-1,38

Source: Municipalities in Serbia, 2002-2010, and Municipalities and regions in Serbia, 2011-2012, Statistical Office of the Republic of Serbia

If we observe how agricultural land ranges in statistical data (Table 4 and Table 5), the trend of a slight decline in all municipalities except for the City of Niš and Municipality of Doljevac can be noted. In the city of Niš agricultural land had increased by 1,75%, and its share of total surface area had increased from 62,00% to 63,10%, while in the municipality of Doljevac that increase is 4,20% and from 76,00% to 78,70%, respectively.

The trend of increase of agricultural land in The City of Niš and municipality of Doljevac cannot be associated with the expansion of the construction area in them for 61,98% and 71,72% (Table 6), but is consequence of the influence of the city of Niš as industrial center with developed industries and agribusiness, in which primary agricultural production is directly supported.

Table 6 Comparative review of construction area enlargement and demographic developments

Administrative District City-municipality Settlement type	Total area (km ²)	Construction area (ha)			Ratio 2002/2011 (%)		
		Existing area	Planned area	Difference 2002/2011	Construct land area	Agricultural land area	Number of population
Nišavski A. D.	2729	24076,01	39745,46	15671,45	65,09	-0,02	-1,42
Urban		12188,20	19791,81	7633,61	62,63		3,01
Other		11887,81	19953,65	8037,84	67,61		-7,15
The City of Niš	597	13137,00	21148,00	8011,00	60,98	1,75	3,89
Urban		10142,18	16142,21	6000,03	59,16		4,15
Other		2994,82	5005,79	2010,97	67,15		3,18
Aleksinac	707	5452,54	8912,91	3460,37	63,46	-0,29	-10,19
Urban		1262,79	2067,63	804,84	63,73		-3,54
Other		6779,69	6845,28	2655,53	39,17		-13,37
Gadžin Han	325	1204,00	2690,00	1486,00	123,42	-3,27	-19,83
Urban*		120,00	184,68	64,68	53,90		-1,77
Other		1084	2505,32	1421,32	131,11		-22,27
Doljevac	121	990,00	1700,00	710,00	71,72	4,20	-5,61
Urban*		166,64	503,43	336,79	202,11		-4,99
Other		823,36	1196,57	373,21	45,33		-5,88
Merošina	193	1039,68	1842,88	803,20	77,25	-0,85	-5,70
Urban*		129,74	219,79	90,05	69,41		1,18
Other		909,94	1623,09	713,15	78,37		-6,44
Ražanj	289	827,70	1039,10	211,40	25,54	-0,12	-19,52
Urban*		116,58	167,86	51,28	43,99		-19,00
Other		711,12	871,24	160,12	22,52		-19,6
Svrljig	497	1425,09	2412,57	989,48	69,43	-0,96	-17,56
Urban		250,27	506,21	255,94	102,26		2,65
Other		1174,82	1906,36	733,54	62,44		-32,54

Source: The Republic Geodetic Authority of Serbia- Central Registry of planning documents, Calculations

The data on “Agricultural land area” and “Number of population” in the last two columns of Table 6 are taken from Table 4 And Table 1 respectively.

It should be noted that the Master Plan of the City of Niš 2010-2025 had increased the territorial coverage from 18 settlements that were covered by Master Plan of Niš 1995 (the City of Niš and 17 suburbs), to 37 settlements (two urban, 10 suburban and 25 rural settlements), but the last column of the Table 6 for the City of Niš displays official census results of settlements that have been listed as urban in 2002 and 2011 census.

Spatial plan of The City of Niš 2021 had defined land use in most of the rural settlements through the schematic views of settlements development, but land use in 22 urban settlements, other than ones developed through the Master Plan of The City of Niš 2010-

2025, was planned to be conducted through general regulation plans, which are mostly in the process of creation, so that data was unavailable at the moment of making this paper.

The increase of the built-up land area (Table 6) is high in all municipalities, as well as at the regional level, and it amounts to 65,09%, while in the municipality of Gadzin Han is as high as 123,00%. Demographic movements on the other hand do not show a positive trends, except in the city of Niš, where a slight increase in population by the 3,89% is recorded (Table 2), while in the municipality of Gadzin Han it is the most negative in the region, with -18,83%, so it cannot be considered an explanation of mentioned phenomenon.

If we consider the ratio of expansion of construction land area in urban and other settlements (Table 6) it is noticeable that it is uniform at the regional level with 62,63% in urban, and 67,61% in rural settlements, which implicate possible changes in the economy structure.

The situation is similar in the City of Niš (59,16% in urban areas and 67,15% in other settlements), but the municipality Gadzin Han, in which the construction land area of other settlements had increased by as much as 131,11% deviates from the average data, while in the municipalities of Doljevac and Svrlijig situation is reversed and construction land area of urban settlements recorded the largest increase (202,11% and 102,26%, respectively).

3.3. Economy

For the analysis of economic trends, the data on the economically active population performing an occupation by activities and on the households according to income sources from the 2002 and 2011 census were used. Given that mentioned data were not published by settlements in the 2011 census, they have been obtained from the Statistical Office of the Republic of Serbia by special requests (Application No. 9485, and Application No 10625).

The Table 7 shows how the restructuring of the economy reflected to municipal centers and as in other areas, while the Table 8 shows the developments in the number of households by sources of income in the observed period from year 2002 to 2011 by municipalities and settlement types.

By observing the development of non-agricultural activities and agriculture as a traditional economic activity through the change of the number of economically active population performing an occupation by sectors, despite the differences in methodology of data collection and sorting, a drastic decline in the number of persons performing activities in the field of agriculture may be noticed, both at the regional level and at the level of municipalities.

According to the 2002 Census methodology, census data for urban settlements of the City of Niš were not displayed by different City Municipalities, but instead together, for the whole urban area, given that municipality of Niška Banja until the year 2004 existed as independent municipality separate of the City of Niš.

Due to changes in methodology of the 2002 and 2011 Census, there is no absolute comparability of the results displayed in columns "Mixed incomes" and "Personal Incomes", however comparing the data on income sources for households in agriculture and non-agriculture given by the municipalities, and settlement types, an identical trend can be observed, both in urban and in rural areas (Table 9), which all confirms the fact that population of rural settlements is turning to alternative activities carried out either as a primary or as supplemental activity to agricultural production.

Table 7 Economically active population that perform occupation by the industry

Census	Industry	Nišavski A.D.	The City of Niš	Aleksinac	Gadžin Han	Doljevac	Merošina	Ražanj	Svrlijig
<i>According to the methodology of 2011 Census</i>	Agriculture, forestry and fishing	8380	933	2881	702	360	1070	1865	569
	Mining and quarrying	389	121	248	0	15	2	3	0
	Manufacturing	18837	13026	2400	482	879	669	449	932
	Electricity, gas and steam supply	1363	1095	116	19	46	41	12	34
	Water supply, sewerage, and waste man.	2181	1461	322	44	145	131	26	52
	Construction	5886	3866	913	160	337	233	172	205
	Wholesale, retail trade and repair	16596	13556	1387	163	564	307	221	398
	Transportation and storage	6686	5254	584	77	275	213	134	149
	Accommodation and food service	2971	2419	263	29	64	60	55	81
	Information and communication	2371	2201	110	7	20	8	8	17
	Financial and insurance activities	1916	1765	89	14	10	9	12	17
	Real estate activities	122	112	5	0	2	3	0	0
	Professional, scientific and technical act.	3194	2701	235	46	64	60	42	46
	Administrative and support services	2232	1805	143	19	163	56	15	31
	Public administration and defense	10897	8767	892	163	391	311	118	255
	Education	9131	7573	886	71	213	139	101	148
	Human health and social work	10677	8836	968	119	334	158	90	172
	Arts, entertainment and recreation	1375	1181	98	18	40	20	10	8
	Other service activities	1848	1497	165	19	48	43	34	42
	Activities of households as employers	9	8	1	0	0	0	0	0
Activities of extraterritorial organizations	23	21	2	0	0	0	0	0	
Unknown	608	333	201	8	31	20	10	5	
<i>According to the methodology of 2002 Census</i>	Agriculture, hunting and forestry	22358	3869	8145	1160	938	2247	2746	3253
	Fishing	113	8	3	0	0	0	0	0
	Mining and quarrying	53	54	218	0	60	5	9	7
	Manufacturing	32145	22818	3394	1131	1455	833	685	1829
	Electricity, gas and water production	1781	1246	262	23	101	40	37	72
	Construction	6367	3768	1094	188	546	308	164	299
	Wholesale, retail trade and repair	15684	12476	1626	119	582	246	282	353
	Hotels and restaurants	2932	2305	334	34	66	51	74	68
	Transportation, storage and networking	8326	6527	730	81	353	259	195	181
	Financial brokerage	1493	1310	92	6	15	25	18	27
	Real estate, renting and business activities	2867	2500	166	16	79	42	16	48
	Public administration and defense	8405	6640	760	121	333	247	109	195
	Education	7002	5583	793	89	194	104	101	138
	Health and social work	10757	8852	1041	127	284	156	113	184
	Other communal, social and personal serv.	3204	2551	271	28	139	121	47	47
	Private households with employees	15	10	5	0	0	0	0	0
	Extraterritorial organizations	6	5	1	0	0	0	0	0
Unknown	6144	4693	797	117	86	170	61	220	

Source: 2002 Census of Population, Households and Dwellings in the Republic of Serbia, Population – Activities and sex of the active population that performs occupation, Statistical Office of the Republic of Serbia, ISBN 86-84433-11-4; 2011 Census of Population, Households and Dwellings in the Republic of Serbia, POPULATION – Industry, Statistical Office of the Republic of Serbia, ISBN 978-86-6161-091-2

Table 8 Economically active population that perform occupation by the industry

Administrative District City-municipality Settlement type	2002 Census data						2011 Census data						
	Total	Agriculture, hunting and forestry	Fishing	Manufacturing	Wholesale, retail trade and repair	Other	Unknown	Total	Agriculture, forestry and fishing	Manufacturing	Wholesale, retail trade and repair	Other	Unknown
Nišavski A.D.	129850	22358	11	32145	15684	53508	6144	107692	8380	18837	16596	63271	608
Urban	72165	931	9	18869	10964	37288	4104	68707	620	10839	11527	45432	289
Other	57685	21427	2	13276	4720	16220	2040	38985	7760	7998	5069	17839	319
The City of Niš	85215	3869	8	22818	12476	41351	4693	78531	933	13026	13556	50683	333
Urban	60899	299	8	15182	9544	32444	3422	59305	245	8563	10199	40078	220
Other	24316	3570	0	7636	2932	8907	1271	19226	688	4463	3357	10605	113
Medijana	-	-	-	-	-	-	-	28726	91	3653	4581	20310	91
Urban	-	-	-	-	-	-	-	27311	83	3341	4325	19480	82
Other	1563	23	0	619	199	648	74	1415	8	312	256	830	9
Palilula	-	-	-	-	-	-	-	21661	242	3963	4027	13326	103
Urban	-	-	-	-	-	-	-	16606	64	2714	3014	10743	71
Other	5543	727	0	1767	778	1955	316	5055	178	1249	1013	2583	32
Pantelejš	-	-	-	-	-	-	-	16179	234	2769	2973	10114	89
Urban	-	-	-	-	-	-	-	10906	53	1712	2045	7040	56
Other	5522	1216	0	1523	564	1870	349	5273	181	1057	928	3074	33
Crveni Krst	-	-	-	-	-	-	-	7963	316	1690	1328	4593	36
Urban	-	-	-	-	-	-	-	3170	29	535	584	2015	7
Other	8207	1335	0	2408	991	3073	400	4793	287	1155	744	2578	29
Niška Banja	4953	300	5	1759	659	2056	174	4002	50	951	647	2340	14
Urban	1472	31	5	440	259	695	42	1312	16	261	231	800	4
Other	3481	269	0	1319	400	1361	132	2690	34	690	416	1540	10
Aleksinac	19732	8145	3	3394	1626	5767	797	12909	2881	2400	1387	6040	201
Urban	5797	189	1	1631	812	2718	446	5039	92	1142	701	3061	43
Other	13935	7956	2	1763	814	3049	351	7870	2789	1258	686	2979	158
Gadžin Han	3240	1160	0	1131	119	713	117	2160	702	482	163	805	8
Urban*	474	19	0	209	27	195	24	383	9	84	42	246	2
Other	2766	1141	0	922	92	518	93	1777	693	398	121	559	6
Doljevac	5231	938	0	1455	582	2170	86	4001	360	879	564	2167	31
Urban*	1327	148	0	310	196	649	24	1132	131	189	144	654	14
Other	3904	790	0	1145	386	1521	62	2869	229	690	420	1513	17
Merošina	4854	2247	0	833	246	1358	170	3553	1070	669	307	1487	20
Urban*	459	99	0	87	42	217	14	383	34	74	60	212	3
Other	4395	2148	0	746	204	1141	156	3170	1036	595	247	1275	17
Ražanj	4657	2746	0	685	282	883	61	3377	1865	449	221	832	10
Urban*	509	61	0	113	82	228	25	342	17	58	57	206	4
Other	4148	2685	0	572	200	655	36	3035	1848	391	164	626	6
Svrljig	6921	3253	0	1829	353	1266	220	3161	569	932	398	1257	5
Urban	2700	116	0	1337	261	837	149	2123	92	729	324	975	3
Other	4221	3137	0	492	92	429	71	1038	477	203	74	282	2

Source: 2002 Census of Population, Households and Dwellings in the Republic of Serbia, POPULATION – Activities and sex of the active population that performs occupation, Statistical Office of the Republic of Serbia, ISBN 86-84433-11-4; 2011 Census of Population, Households and Dwellings in the Republic of Serbia, POPULATION – Industry, Statistical Office of the Republic of Serbia, ISBN 978-86-6161-091-2, Application No. 10625

Table 9 Households according to the income sources

Administrative District City-municipality Settlement type	2002 Census data						2011 Census data					
	Total	In agriculture	In non-agriculture	Personal incomes	Mixed incomes	Without income	Total	In agriculture	In non-agriculture	Personal incomes	Mixed incomes	Without income
Nišavski A.D.	127920	5962	46141	40159	28959	6699	128303	1508	38040	48641	36251	3863
Urban	73790	189	32663	23264	13940	3734	78184	84	28635	27650	19258	2557
Other	54130	5773	13478	17895	15019	2965	50119	1424	9405	20991	16993	1306
The City of Niš	85269	1084	36679	26266	16902	4338	89903	170	31472	32008	23394	2859
Urban	62247	66	27884	19718	11507	3072	66971	31	25169	23416	16053	2302
Other	23022	1018	8795	6548	5395	1266	22932	139	6303	8592	7341	557
Medijana	-	-	-	-	-	-	32190	11	12289	11267	7440	1183
Urban	-	-	-	-	-	-	30680	10	11714	10755	7060	1141
Other	1477	5	759	403	233	77	1510	1	575	512	380	42
Palilula	-	-	-	-	-	-	24777	39	8661	8753	6550	774
Urban	-	-	-	-	-	-	18894	10	7010	6593	4649	632
Other	5403	205	2102	1448	1300	348	5883	29	1651	2160	1901	142
Pantelej	-	-	-	-	-	-	18013	43	6551	6199	4732	488
Urban	-	-	-	-	-	-	12028	6	4746	4041	2867	368
Other	4776	327	1712	1234	1209	294	5985	37	1805	2158	1865	120
Crveni Krst	-	-	-	-	-	-	9912	69	2597	3715	3245	286
Urban	-	-	-	-	-	-	3889	2	1265	1453	1039	130
Other	7545	392	2717	2106	1964	366	6023	67	1332	2262	2206	156
Niška Banja	5315	99	2138	1854	965	259	5011	8	1374	2074	1427	128
Urban	1494	10	633	497	276	78	1480	3	434	574	438	31
Other	3821	89	1505	1357	689	181	3531	5	940	1500	989	97
Aleksinac	18616	2176	4841	5731	4779	1089	17016	604	3457	6807	5675	473
Urban	6365	44	2783	2047	1101	390	6132	12	2056	2317	1622	125
Other	12251	2132	2058	3684	3678	699	10884	592	1401	4490	4053	348
Gadžin Han	4359	376	749	2052	918	264	3637	167	488	2034	834	114
Urban*	440	7	202	130	85	16	464	4	168	195	83	14
Other	3919	369	547	2922	833	248	3173	163	320	1839	751	100
Doljevac	5367	236	1460	1738	1752	181	5261	51	1028	2136	1900	146
Urban*	1404	40	472	450	380	62	1399	20	339	536	457	47
Other	3963	196	988	1288	1372	119	3862	31	689	1600	1443	99
Merošina	4237	443	738	1311	1574	171	4046	147	476	1549	1788	86
Urban*	388	9	99	111	158	11	388	3	68	127	178	12
Other	3849	434	639	1200	1416	160	3658	144	408	1422	1610	74
Ražanj	3544	522	415	1057	1352	198	2982	237	277	1116	1287	65
Urban*	518	9	198	153	106	52	421	0	121	157	129	14
Other	3026	513	217	904	1246	146	2561	237	156	959	1158	51
Svrljig	6528	1125	1259	2004	1682	458	5458	132	842	2991	1373	120
Urban	2428	14	1025	655	603	131	2409	14	714	902	736	43
Other	4100	1111	234	1349	1079	327	3049	118	128	2089	637	77

Source: 2002 Census of Population, Households and Dwellings in the Republic of Serbia, POPULATION – Households and Families, Statistical Office of the Republic of Serbia, ISBN 86-84433-38-6; 2011 Census of Population, Households and Dwellings in the Republic of Serbia, POPULATION - Basic households characteristics, Statistical Office of the Republic of Serbia, ISBN 978-86-6161-082-0, Application No. 9485

3. CONCLUSION

Presented results imply that changes in the spatial and physical structures of the settlement did not take place parallel to demographic, economic and social transformations. Although attempts have been made in order to guide spatial development of the settlements, that process took place largely spontaneously, without clear commitments in the conception of overall development.

Despite the depopulation there was enlargement of the built-up area in all of the settlements, which indicates that planning failed to comply with the principles of sustainability in the use of space. Natural and ecological potentials of agricultural land, which was the basis of economic development along with the industrial corporations, has been marginalized as a non-profit, and environmental and sustainability dimension of development completely ignored due to the need of satisfying the existential questions of employment and preventing of demographic drain.

Analyzing the expansion of built-up areas as well as demographic and economic trends, the tendency of local government units to adapt to new market conditions by providing areas that are intended for the development of enterprises from the tertiary economy sector can be observed.

Expansion of built-up areas of other settlements, despite the generally negative demographic indicators, also indicates a tendency of restructuring from the primary agricultural production as traditional economic activity in them, to the other, currently more profitable branches of economy.

The dominance of non-agricultural activities unrelated to the character of a settlement indicates that the economic trends have become a dominant factor in the growth of the building areas, which leads to conclusion that the analysis of the economic trends should be more widely used as a basis in determining the extent of the expansion of construction area, as well as in the determination of the prevailing purposes of the newly planned areas.

Acknowledgement. *The paper is a part of the research done within the subject of Theory of spatial and urban planning of Doctoral academic studies on Faculty of Civil Engineering and Architecture, Niš, Serbia. The authors would like to thank to the Dissemination and Public Relations Division of the Statistical Office of the Republic of Serbia for the data on the number of agricultural population, the number of economically active population performing an occupation by activities, and the number of households according to income sources displayed by the settlements from the 2011 census, obtained by special requests (Application No. 9485 and 10625).*

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UTICAJ PROMENE PRIVREDNE STRUKTURE NA TERITORIJALNI I DEMOGRAFSKI RAST NASELJA U POST-SOCIJALISTIČKOM PERIODU, PRIMER NIŠAVSKOG UPRAVNOG OKRUGA

Rad se bavi analizom uticaja izmenjenih društveno-političkih i ekonomskih uslova u post-socijalističkom periodu na prostornu, demografsku i funkcionalnu transformaciju naselja na primeru Nišavskog upravnog okruga. Na osnovu popisnih podataka i podataka iz aktuelne planske dokumentacije, sprovedena je komparativna analiza u cilju određivanja međuzavisnosti između promena u načinu korišćenja zemljišta i demografskih kretanja prema tipu naselja. S obzirom da se razvoj odvija pod uticajem mnoštva faktora analizirane su i promene u privrednoj strukturi kako bi se ispitalo nivo do koga su primenjeni savremeni principi održivosti i kontrole rasplinjavanja naselja. U teorijskom delu rada dat je prikaz nastanka i razvoja ideje ograničenja rasplinjavanja naselja, uz pregled odredbi bitnijih međunarodnih konvencija.

Ključne reči: *Prostorno i urbanističko planiranje; upotreba prostora, rasplinjavanje naselja*