

LABOR, PROVISIONING AND IMMIGRATION AS INDICATORS OF ZAGREB'S SUBURBANIZATION. THE CASE OF THE BISTRA MUNICIPALITY

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Abstract

The objective of the paper is to study the causes and contemporary trends in suburbanization in the Zagreb environs using the example of the Bistra Municipality. Special emphasis will be placed on research into immigration as a process explicitly linked to the residential suburbanization of Zagreb, and the interaction between Bistra and Zagreb/Zaprešić through the functions of labor, provisioning and the fulfillment of the cultural needs of Bistra's residents.

Key words: suburbanization, Bistra, Zagreb, labor, immigration, provisioning

DELO, OSKRBA IN PRISELJEVANJE KOT DEJAVNIK SUBURBANIZACIJE ZAGREBA. PRIMER OBČINE BISTRA

Izvleček

V članku so na primeru občine Bistra prikazani vzroki in sodobni suburbanizacijski procesi v zagrebškem obmestju. Posebno težišče je dano proučevanju priseljevanja kot izrazitemu procesu demografske suburbanizacije Zagreba ter interakciji med Bistrom in Zagrebom/Zaprešičem v funkciji dela, oskrbe in zadovoljevanja kulturnih potreb prebivalcev Bistre.

Ključne besede: suburbanizacija, Bistra, Zagreb, delo, priseljevanje, oskrba

INTRODUCTION

The wider Zagreb region, located within the daily urban system of the City and generally encompassed by the boundaries of Zagreb County, has been subject to intense suburbanization in the recent period, particularly during the 1970s. The primary drivers of urban transformation in the city's environs have been labor and housing.

Bistra is a suburban municipality (6 settlements with a population of 6,098 in 2001) in the northwestern section of the Zagreb urban region, a little over 20 kilometers from the city center. Bistra has been transformed from a primarily rural area near to a largely urbanized and contiguous urban zone in the 1990s¹. The six settlements that form the current municipality were separated from the Zaprešić Municipality and in 1995 they were joined in the Bistra Municipality. In the last intercensus period (1991-2001) Bistra experienced stronger demographic growth, mostly thanks to more intense immigration of residents from Zagreb and Bosnia-Herzegovina. The construction of new family homes became more intense, plots of land were designated for new use, local businesses began to develop, and a part of the municipal land became a section of the Medvednica Nature Park. Problems specific to suburban, peri-urban rural, or 'rurban' areas (as rural areas surrounding urban centers are called), appeared in Bistra. The pressure of new growth on the existing infrastructure, conflicts of interest over ways to utilize limited land resources, and the considerable social and environmental consequences of the lives of daily commuters—already familiar to the environs of other European (Errington, 1994) — emerged here as well.

OBJECTIVES AND RESEARCH METHODS

The objective of this paper is to study the causes and contemporary trends in suburbanization in the Zagreb environs using the example of the Bistra Municipality. The attractiveness and function of Zagreb as the core city and Zaprešić as a satellite center will also be examined and compared. Special emphasis will be placed on research into immigration as a process explicitly linked to the residential suburbanization of Zagreb, and the interaction between Bistra and Zagreb/Zaprešić through the functions of labor, provisioning and the fulfillment of the cultural needs of Bistra's residents.

The basic method employed in this research was the survey, chosen because the intention was to become more thoroughly acquainted with the causes for immigration and to

¹ Clear evidence of Bistra's rural character is reflected in the fact that in 1945 there were 1,122 residents in the settlement of Poljanica Bistranska, of which 1,050 were involved in agriculture. This was also a time of agrarian overpopulation and difficult living conditions. There were no doctors in the village, the infant mortality rate was very high (in the period from 1861 to 1945, one in every five babies died). However, the death of a sick child was considered a social and economic relief, and the same was thought of a healthy, but unwanted infant, particularly if the family was already numerous and exceptionally poor. Nikola Nikolić, conducting a survey on peasant nutrition, recorded the words of the grandmother of a deceased child during its funeral: "His mother's a wet-nurse for a rich baby in Zagreb, and God grant she does it as long as she can... Mister, why should we be said if we aren't? It's better for the baby up there than here in this hell on Earth." (Brezović, 2002)

examine the reasons for and intensity of interaction between Zagreb and Zaprešić. These data were not encompassed by the population census conducted in 2001. The survey was conducted in the Bistra Municipality on 19 May 2003, using the systematic random sampling method. The sampling included all settlements in the Bistra Municipality. A total of 404 households were surveyed, which is 22.4% of the total number of households in the municipality in 2001 (1820).² The number of households in the sampling was proportional to the number of households in each settlement. Using a 1:5000 map of the municipality, each settlement was divided into several spatial units (in compliance with the number of surveyors) so that the sampling would encompass all parts of individual settlements³. The results of the survey were supplemented with data obtained from interviews with the mayor of the Bistra Municipality, Mr. Krešimir Gulić, and local businessman Mr. Ivica Žnidar. An analysis of data from censuses in various years and the agricultural censuses from 1960 and 2003 were also used.

THE BISTRA MUNICIPALITY

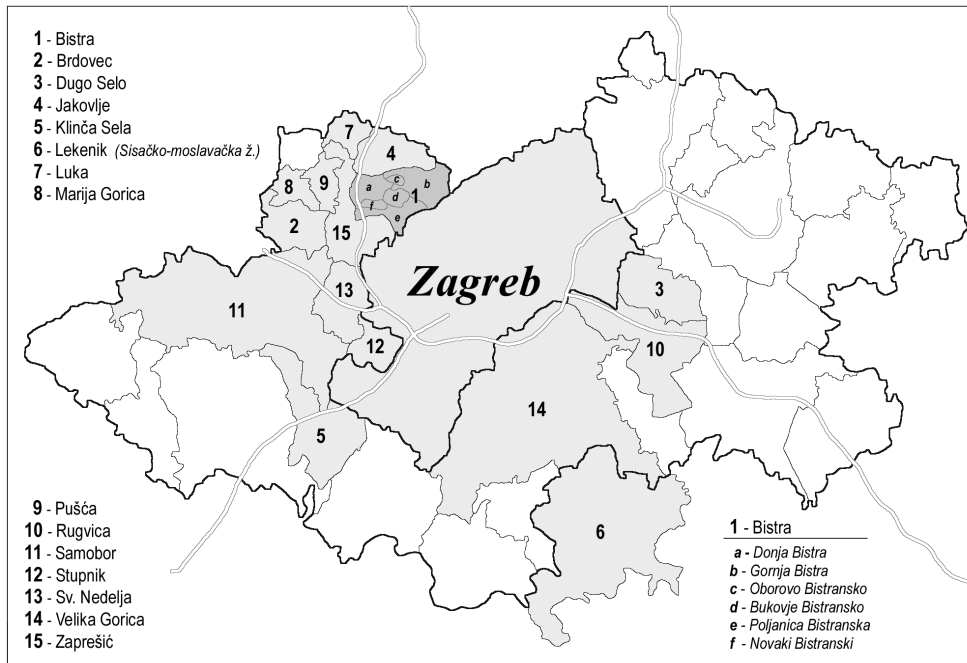
The settlements of the Bistra Municipality are part of a flood plain and extended lowland terraces between the lower course of the Krapina River and the northwestern slopes of Medvednica Mountain. The direction and intensity of its transformation were predisposed by its proximity to Zagreb and Zaprešić (particularly in the past), and the municipality's position in a transit corridor. The municipal seat, Donja Bistra (pop. 1,258), only 7 km from the western periphery of the City of Zagreb (a little over 20 km from the city center), and approximately 7 km from its satellite Zaprešić (pop. 17,700). The municipal territory is

² The number of households surveyed is proportional to the total number of households in each settlement in the Bistra Municipality (according to the 2001 census). Bukovje Bistransko – 112 households, 30 surveyed; Donja Bistra – 356 households, 80 surveyed; Gornja Bistra – 481 households, 98 surveyed; Novaki Bistranski – 234 households, 52 surveyed; Oborovo Bistransko – 283 households, 58 surveyed; Poljanica Bistranska – 354 households, 86 surveyed.

³ Third and fourth year students in all majors in the Geography Department in Zagreb participated in the survey (divided into pairs), within the framework of the practice portion of the "Rural Geography Seminar." The survey controllers (one for each settlement) were students in second (final) year of postgraduate study in the course on "Geographic Foundations of Spatial Planning and Organization," also in the Geography Department. The survey was led by the authors. Prior to work in the field, the surveyors attended lectures on surveying methods in geographic research, setting research objectives, development of samplings, determination of dependent and independent variables, and sources of errors, and participated in the formulation of survey questions. Besides acquiring knowledge on surveying methods, the goal of the lecture and joint formulation of questions was to raise student awareness of the importance of the role of surveyors in research work, so that they would carry out their planned tasks as responsibly as possible. Besides the questionnaires, the surveyors were given 1:5000 maps of the Bistra Municipality, with the boundaries of their survey zones delineated, as well as detailed instructions on the selection of households and the approach to respondents. The residents of the Bistra Municipality were, with the consent of the municipal mayor, informed of the survey several days in advance with posters on the municipal building, on bulletin boards in individual settlements and in markets and hospitality facilities. The basic problems that emerged during the survey were: the initial disorientation of the surveyors when they failed to conduct the survey in several selected households (nobody was home or did not want to participate) or the surveyors unintentionally crossed into the boundaries of a neighboring survey zone.

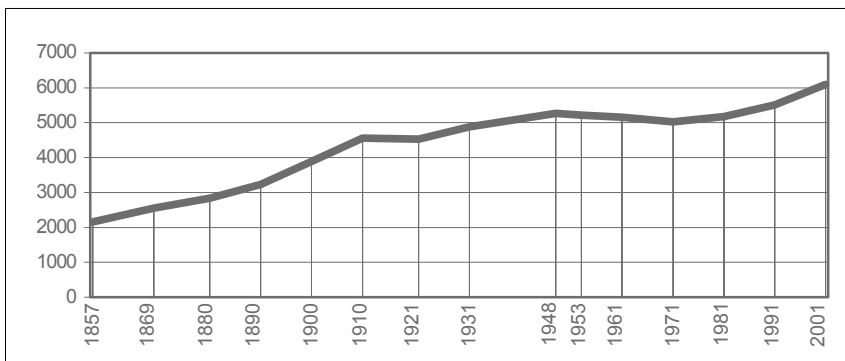
traversed by a section of a state road and the “Zagorje” highway, and the Zaprešić road hub is located right along its southern boundary (Fig. 1).

Figure 1: Zagreb urban region (2001) according to Vresk's model



The basic feature of socio-geographic developments in the Bistra Municipality until the mid-twentieth century was slight population growth under traditional economic conditions (Fig. 2).

Figure 2: Population dynamics in the Bistra Municipality (1857-2001)



In 1961, almost 70% of the Bistra Municipality's population was involved in agriculture (Tab. 1). The municipality socio-economic structure was as follows: 61.8% of the population was employed in the primary sector, 24.6% in the secondary, and 13.7% in the tertiary. Under the influence of industrialization in Zagreb and the construction of roads, the social and spatial mobility of the population began to grow after mid-century, which was reflected in deagrarianization and a smaller population during the 1950s and 1960s. A portion of the inhabitants even emigrated from Croatia. Since the 1970s, the process of immigration and socio-economic transformation began to intensify as the result of increasing integration into Zagreb's daily urban system. Accelerated socio-economic transformation and expansion of the Zagreb urban region during the 1980s and 1990s resulted in greater suburbanization, with the accompanying physiognomic and functional changes. Most residents in 2001 were employed in the tertiary sector (58.5%), and the secondary sector (35%), while only 6.5% of the active population was employed in the primary sector. The marked socio-economic restructuring is lucidly reflected in the fact that the share of the agricultural population was only 2.5% in 2001 (in contrast to the 69.2% in 1961) (Tab. 1). The physiognomy of settlements also changed: the use of land for agricultural production fell by a factor of 2.8 (from 2,301 ha in 1961 to 833.61 ha in 2003), farm buildings in rural yards were given new functions, primarily as garages for personal vehicles. Up to the present, the territory of the Bistra Municipality has developed into a much more urbanized zone of the Zagreb region.

*Table 1: Agricultural population by the settlements in the Bistra Municipality (1961-2001)*⁴

Settlement	1961	1991	2001
Bukovje Bistransko	174	7	–
Donja Bistra	309	29	–
Gornja Bistra	604	44	–
Novaki Bistranski	367	35	–
Oborovo Bistransko	34	17	–
Poljanica Bistranska	157	47	–
The Bistra Municipality	3606	179	156

⁴ Note: in the censuses of 1953 and 1961, the main criteria for definition of agricultural population was "activity", and the additional was According to this "occupation" (for the persons "out of activities"). According to this criteria agricultural population includes:

- a) active persons employed in agriculture (including fishing trade and water resources management);
- b) persons who were "out of activity" at the census time, but were employed as "agriculturalist, fishermen and forestry workers", and
- c) all persons supported by the persons quoted as a) and b).

That means that persons employed out of agriculture (e.g. mechanics, accountants and similar) but in economic organisations belonging to agriculture as a sort of activity, are also included in agricultural population. On the other hand, the persons with agricultural occupation employed in non-agricultural activities (e.g. gardeners in industrial firms, flower-growers in public parks, etc.) are not included in agricultural population (it is not possible to compare directly the results of the censuses of 1961 and 1971, with those of 1981, 1991 and 2001).

PRIOR RESEARCH

The following section contains a brief overview of prior research to provide some background information on the tendencies and features of the Zagreb urban region's development.

Suburbanization is a relatively recent process that came to the fore during the 1960s. Prior to this, development was characterized by a marked concentration of the population and activities in Zagreb itself. Urbanization based on industrial development (thoroughly) changed the relationship between the city and its environs. Such development was caused by two spatial processes in the environs: settlement in the city and daily commuting, meaning the beginnings of development of an urban region. The first extensive research into the Zagreb urban region was conducted by Žuljić (1957, 1964, 1965). The city was viewed within its administrative boundaries, while the environs were looked upon as a zone linked to Zagreb by the labor force's daily commutes. The region encompassed all settlements in which the total share of the agricultural population is less than 50%, with strong functional links to Zagreb and an intense tendency toward physiognomic transformation. The urban region consists of so-called narrower and wider urbanization zones, formed of settlements in which the share of the agricultural population is less than 50%, and with a positive migration balance. The urban core defined in this manner star-like form, with narrow urbanized corridors all along the main thoroughfares. The socio-economic transformation of the environs was slight, while resettlement into the city caused a decline in the population of these settlements.

Rogić (1966) employed similar criteria to differentiate the city from its surroundings. Based on changes in the size and structure of settlements, and the share of the agricultural population, he discerned two categories of peri-urban transformation: a peripheral urbanized zone, surrounding the broader zone of the potential metropolitan region. In later works (1979/80), using the principle of conditional homogenized regionalization, Rogić defined the Zagreb urban region as an area of qualitative cultural landscape transformation under the influence of Zagreb. He differentiated the region into the peri-urban zone and the peri-urban periphery.

Works by Vresk represent the most important contribution to the analysis of the relationship between the city and its environs. Using the results of the 1971 census, Vresk set up a model for delineating the socio-economic urban region using four variables. Based on this model, the region included settlements in the environs which satisfied the following criteria:

- less than 50% of the total population involved in agriculture;
- a share of employed in the active population greater than 30%;
- Zagreb (or one of its satellite settlements) is the primary center for employment in that settlement;
- the settlement is a part of the contiguous environs of the central city (Vresk, 1978).

The first two variables indicate the intensity of socio-economic transformation in settlements, while the other two show their dependency on Zagreb. The urban region defined in this manner therefore encompassed 244 settlements with a population of 735,915. Within the framework of the region, Zagreb's development was more dynamic than that of the its

environs. The city's population therefore increased 31%, while that of the environs only grew 24%. Zagreb accounted for 75.9% of the region's population, while the remaining settlements had only 24.1%. The developmental dynamics and arrangements of settlements, and the form (elongated toward the east and south, with the features of contiguous, although largely slightly urbanized environs only in the west and northwest) indicated the early phase of urban region development (Vresk, 1978, 1979, 1979/80). Within the framework of an urban region delineated in this manner, the settlements of today's Bistra Municipality were only slightly urbanized.

In subsequent research, this model was altered somewhat. Another variable (a share of non-agricultural households of 10% or more) was applied in the 1971-1981 intercensus period, while the remaining parameters were sharpened (a share of the agricultural population no greater than 30%, a share of daily commuters to Zagreb not less than 50% of the total employed or daily migrants if such settlement is part of the contiguous environs) (Vresk, 1984a). The urban region was spatially smaller than the one from the preceding period, and besides Zagreb it encompassed 137 settlements of varying degrees of urbanization, with a total population of 841,213. The ratio between the city's population and that of the environs is 78.7% to 21.3%. However, during this period the region acquired a new feature, reflected in housing rather than labor. This is shown by the fact that the city's population grew 15.4%, while that of the environs grew 43.3%. These indicators lead to the conclusion that the Zagreb urban region was experiencing a phase of relative decentralization. The suburbanization process was still most marked along the main thoroughfares, while satellite towns became the new centers of growth (Sesvete, Dugo Selo, Velika Gorica, Jastrebarsko, Samobor and Zaprešić) (Vresk, 1984a, 1984b). During this period the suburbanization process was intense in the Bistra Municipality's settlements, reflected in the fact that half of the settlements (Gornja Bistra, Oborovo and Poljanica) joined the group of more intensely urbanized settlements of the Zagreb environs.

The final model for delineating the urban region (1991) was adapted to the most recent administrative/territorial changes (Fig. 1), and the parameters were aligned with the degree of socio-economic transformation (Vresk, 1994, 1995, 1997). During this period the process of suburbanization was even more marked. It occurred predominantly in the transformation of suburban settlements, thanks to the socio-economic restructuring of the population and daily commutes to work in the core city. An urbanized hinterland was created around Zagreb which, together with the core city, forms a socio-economic region with 311 settlements and 941,602 inhabitants. About 75% of the region's population lives in the core city, while approximately 25% lives in the environs. In terms of labor this ratio is even more explicit, i.e. 90% to 10% in the city's benefit. These ratios lead to the conclusion that the urban region is still in its early developmental phases. The population of the environs grew faster than the city's population during the 1981-1991 period, which indicates that the urban region has entered a phase of relative decentralization in the demographic sense. The primary spatial-structural form of Zagreb's suburbanization is therefore satellization. 64.4% of the workplaces of the environs is concentrated in satellite towns, containing 42.2% of the population of the environs (Vresk, 1997). During this period, the Bistra Municipality's settlements became part of the more intensely urbanized and contiguous environs of Zagreb. More recent processes were specifically examined using the surveyed results detailed below.

RESEARCH RESULTS

Out of the 404 households surveyed, 120 households (i.e. the respondents in them) (29.7%) had resettled in the Bistra Municipality.⁵ Most of these came from Zagreb (35.8%) and Bosnia-Herzegovina (15.8%)⁶ (Tab. 2). More than three fourths (77.5%) settled in three settlements in the municipality: Donja Bistra, Poljanica Bistranska and Gornja Bistra (Tab. 2). In terms of educational level, most of the new residents had secondary school qualifications (70%), followed by primary school qualifications (15.8%), while those with university and college degrees accounted for 11.6% of the new residents.

Table 2: Immigration settlement according to the place of emigration

			Settlement of immigration						
			Bukovje Bistransko	Donja Bistra	Gornja Bistra	Novaki Bistranski	Oborovo Bistransko	Poljanica Bistranska	
Place of emigration	Same municipality	Donja Bistra	–	–	1	–	–	–	1
		Gornja Bistra	–	–	1	–	–	–	1
		Novaki Bistranski	–	–	1	–	–	–	1
		Oborovo Bistransko	1	1	–	–	–	–	2
		Unknown	–	–	–	–	–	5	5
	Same county	Zaprešić	1	–	1	–	1	2	5
		Other settlements	–	3	1	1	–	3	8
		Unknown	–	2	3	–	–	–	5
	Other county	Zagreb	6	11	7	–	5	14	43
		Other settlements	1	2	5	1	2	5	16
		Unknown	–	2	2	1	–	1	6
	Other country	BH	–	11	5	2	1	–	19
		Other countries	1	3	1	2	1	–	8
				10	35	28	7	10	30

Source: Survey, 19th May 2003

⁵ According to the 2001 census (Population based on migration features, by municipality/town, table 7; 2nd edition), out of a total population of 6,098 in the Bistra Municipality, 3,960 (64.9%) were born in the settlement in which they live, while 2,027 (33.2%) immigrated.

⁶ According to the 2001 census (Population based on migration features, by municipality/town, table 7; 2nd edition), a total of 443 residents, or 21.9% of all immigrants, came from Bosnia-Herzegovina. According to the survey, 19 out of 120 respondents and their families (15.8%) are immigrants. It is worth mentioning that a part of the difference can be interpreted by the fact that a portion of the residents who immigrated from Zagreb or other countries are also actually immigrants from Bosnia-Herzegovina, who spent time elsewhere before coming to Bistra.

Almost a half of the new residents came to Bistra between 1991 and 2001 (51 respondents, or 42.5%). According to the survey results, the trend of more intense immigration had been noted since 1971: 7 respondents moved in during the period from 1951 to 1971 (6.4% of the total new residents), mainly from other settlements in the same municipality or county, while from 1971 to 1991, 40 respondents (36.4%) moved in. During this period (1971-1991), respondents from Zagreb dominated (42.5%), while the first new residents from Bosnia-Herzegovina (15%) were also recorded. Such a trend continued during the 1990s: respondents from Zagreb are the majority, followed by those from Bosnia-Herzegovina, whose share during the 1991-2001 period grew to 22.2%, and who most frequently chose to settle in the settlement of Donja Bistra (as opposed to those from Zagreb, who mostly settled in Poljanica Bistranska, but who are also more equally present in the remaining settlements (Tab. 3).

Table 3: Reasons of emigration of the families immigrated to the Bistra municipality

		Why have you moved ?							
		unresolved housing problems	Unemployment	Poorly paid job	Marriage	War	Other		%
Settlement	Bukovje Bistransko	6	–	–	3	–	1	10	8,3
	Donja Bistra	9	4	–	6	9	8	36	30,0
	Gornja Bistra	9	4	1	9	5	2	30	25,0
	Novaki Bistranski	–	1	–	2	1	3	7	5,8
	Oborovo Bistransko	3	1	1	1	1	3	10	8,3
	Poljanica Bistranska	17	2	1	2	1	4	27	22,5
Total		44	12	3	23	17	21	–	–
%		36,7	10,0	2,5	19,2	14,2	17,5	–	–

Source: Survey, 19th May 2003

Note: more answers are possible, percentage of every answer separately in relation to the total number of respondents; 111 respondents have answered the question

The reason most respondents gave for immigration was “unresolved housing problems” (36.7%). This was followed by “marriage” with 19.2%, and then “war,” cited by 14.2% of the respondents (Tab. 4). Respondents mostly chose the Bistra Municipality due to “possibilities to resolve housing problems,” but also because of its “pleasant environment.”

There is also an interesting correlation between the time of immigration in Bistra and the reasons for moving from a prior domicile. Until the 1970s, the “solving of housing problems” did not even appear as a motive for resettling. The very small number of people who came prior to 1971 generally immigrated due to “marriage” or “unemployment.” Thereafter, people began coming to “solve housing problems” (26.3% of all responses) which cor-

responds to the domination of immigrants from Zagreb, and this statistic peaked during the 1981-1991 period (45.5% of all responses in this period). Between 1991 and 2001, “war” emerged as the second most important reason for immigration (28.3% of all responses) which corresponded to the more intense immigration of residents from Bosnia-Herzegovina.

Table 4: Place and time of immigration into the Bistra Municipality

			Time of immigration						Total	%
			1951-1961	1961-1971	1971-1981	1981-1991	1991-2001	2001-		
Place of immigration	Same municipality	Novaki	–	1	–	–	–	–	1	0,8
		Oborovo	1	1	–	–	–	–	2	1,7
	Same county	Zaprešić	–	–	1	–	2	2	5	4,2
		Ostala naselja	2	–	–	2	4	–	8	6,7
		Nepoznato	–	–	–	2	2	–	4	3,3
	Other county	Zagreb	–	–	8	9	17	9	43	35,8
		Ostala naselja	1	–	4	2	6	1	14	11,7
		Nepoznato	–	–	2	1	3	–	6	5,0
	Other country	BiH	–	–	3	3	13	–	19	15,8
		Ostale države	–	1	1	2	4	–	8	6,7
		Total	4	3	19	21	51	12	–	–
		%	3,3	2,5	15,8	17,5	42,5	10,0	–	–

Source: Survey, 19th May 2003

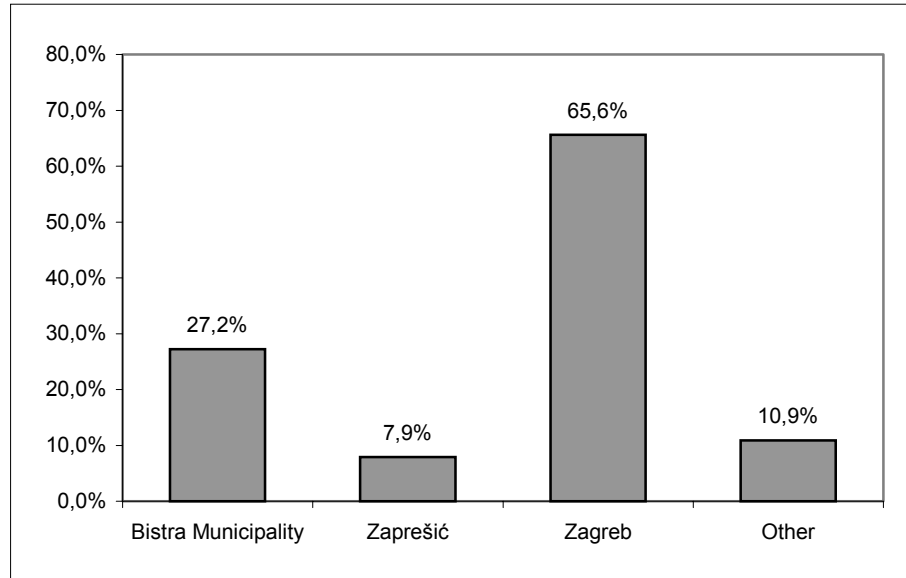
Note: 110 respondents out of 120 have answered the question

Among the respondents (and/or members of their households) who came from other counties or countries (and these predominated), 95 are employed. Most of them work in Zagreb (70.5%), while 11.6% is employed in the Bistra Municipality and 5.3% in Zaprešić (the remaining were employed elsewhere). Among the employed who immigrated from Zagreb, 85% is employed in Zagreb, while that share of those from Bosnia-Herzegovina is somewhat lower, i.e. 68.2%.

According to the survey results, most respondents (65.6%) said they or household members worked in (commuted daily to and from) Zagreb, while 35.1% said they worked in the Bistra Municipality or Zaprešić (Fig. 3). Almost three fourths of those employed in Zagreb have secondary school qualifications (74.5%), while 16% have primary school qualifications. Only 9.6% of the employed have college or university degrees. The structure

of the employed in the Bistra Municipality is lower than the average in the municipality and Zagreb. Almost one fourth of the employed has primary school qualifications, while two thirds have secondary school qualifications.

Figure 3: The share of daily commuters from the Bistra Municipality



Note: more answers are possible, percentage of every answer separately in relation to the number of respondents; 369 respondents have answered the question.

The second set of questions covered the point of provisioning to meet both short- and long-term needs, and to meet the population's needs for certain central functions (culture and entertainment). These data were correlated with the qualifications of those surveyed. As a response to the question of where household members obtain goods to meet short-term needs (groceries, everyday necessities), 63.9% of the surveyed responded that this was in Bistra.⁷ This was followed by Zagreb, with 52%. Responses to the question of meeting medium- and long-term needs (clothing, footwear, furniture, appliances, etc.) were just the opposite. Most respondents procure these type of goods in Zagreb (over 80%), while the role of Zaprešić, Bistra and other settlements in meeting the needs of the population is much smaller. One question which could indicate the dependence on Zagreb deals with meeting specific needs (central functions).

The development of cultural functions in Bistra is very meager, reflected in the data that 72% of the respondents meet this need in Zagreb. It should be stressed that not one of

⁷ Respondents obtain goods for short-term needs at as many as four locations. Most (403) do so at one location, while 138 do so at two locations, 31 at three locations and 1 at four locations. This data indicates the population's relatively high mobility.

the respondents stated Slovenia as a destination for meeting needs for culture. The need for entertainment, sports and recreation is met by almost half of the respondents (46.5%) in the settlements of the Bistra Municipality, while only slightly less do so in Zagreb (34.7%). Zaprešić is in third place with 8.9%. The qualifications of the respondents who answered this question more or less corresponds with the qualifications of the employed in the Bistra Municipality, with the exception that those with college and university degrees more frequently meet their needs for entertainment, recreation and sports in Zagreb.

The attractiveness of Zagreb is reinforced by the data that almost 50% of the respondents travel to Zagreb either every day or five to six times weekly. On the other hand, only 8.7% of them travel to Zaprešić every day or five to six times weekly. Out of the total number of respondents, 76.2% purchase their needs in super-/hypermarkets. 51.2% of the respondents did most, almost all or all of their shopping in super-/hypermarkets. It should be emphasized that over 80% of the respondents with secondary, college or university qualifications shopped in super-/hypermarkets, as opposed to 54.7% of those with primary school qualifications.

COMMENTARY

The commentary on these results shall focus on two principal elements: the importance of immigration, meaning the housing function of the Bistra Municipality, and interactions between Bistra and Zagreb as indicators of suburbanization.

Immigration – continuation and intensification of residential suburbanization

The population of the Bistra Municipality during the 1991-2001 intercensal period grew by 586 (10.6%). Although this increase has been most marked over the last thirty or so years (in which Bistra's population grew), only examination of the data at the settlement level reveals the character of the processes that occurred over the last roughly 15 years. Among the six settlements, two experienced a slight drop (Bukovje Bistransko and Novaki Bistranski), three experienced slight growth (Oborovo, Gornja Bistra, Poljanica Bistranska), and one experienced major growth (Donja Bistra). In 1991, Donja Bistra had a population of 825, while in 2001 it was 1,273. This is growth of 443 persons, or 54.3%! The survey results should be considered in this light. Immigrants from Zagreb and Bosnia-Herzegovina formed a majority of those who moved into Donja Bistra. An equal number of respondents immigrated from Zagreb and Bosnia-Herzegovina. However, those from Bosnia-Herzegovina generally chose Donja Bistra as their destination, while immigrants from Zagreb mostly chose Poljanica Bistranska, although they are more equally distributed in all of the municipality's settlements. Donja Bistra, the 'young' municipal seat, grew from the fourth to the second largest settlement in the municipality thanks to such immigration. These immigrants were mostly attracted by the prospect of solving their housing problems. Taking into consideration the fact that over 70% of the employed members of immigrant households work in Zagreb (85% of those who moved from Zagreb work in Zagreb!), which despite the notable economic dynamics of small businesses in Bistra, speaks of the attracti-

ve force of the labor function in Zagreb, one can conclude that residential suburbanization is the key cause of Bistra's demographic expansion.

What has immigration and intense residential suburbanization meant to the Bistra Municipality in the context of the Zagreb urban region?

The Zagreb urban region consists of 342 settlements in 16 towns and municipalities in, besides the City of Zagreb, two counties: Zagreb and Sisak-Moslavina (only the settlements of the Lekenik Municipality with 6,158 residents). In the last intercensus period, the urban region, including the City of Zagreb, recorded growth of 22,704 residents, or 2.4%. The urban region without the City of Zagreb (which experienced a decline of 16,675, or 0.1%), recorded higher growth: 39,379 residents, or 15.8%. The eastern and western sections of the region closest to the City of Zagreb grew at above-average rates. In demographic terms, the most dynamic was the eastern part of the urban region: in the Rugvica Municipality growth in the number of residents was 54.1% (pop. 4,922 in 1991, and 7,586 in 2001), while in the town of Dugo Selo it was 43.2% (9,969 in 1991, and 14,277 in 2001). Besides the eastern section, the western section of the region also stands out, with the municipalities of Stupnik (28.2% growth) and Sveta Nedjelja (19.3% growth). Among these municipalities, extending ring-like toward the northwest, the urban region is marked by an uninterrupted decline in population (from the town of Zaprešić, with 11.2% growth, to the Luka Municipality with 3.2% growth). Bistra is also in this "arch," with growth of 10.6%. Based on this, population growth in the Bistra Municipality corresponds with the demographic trends in this part of the Zagreb urban region; moreover, it stands below the region's average if the City of Zagreb is not included.

However, "moving down" once more to the level of individual settlements, the picture is quite different. According to the intercensus change from 1991 to 2001, Donja Bistra – looking through the prism of all 342 settlements in the Zagreb urban region – ranks 32nd. It is preceded by the settlements of the Rugvica Municipality and the town of Dugo Selo (the region's most dynamic eastern region) and some settlements in the City of Zagreb and Velika Gorica. In a word, in the western and northwestern parts of the urban region, Donja Bistra is a settlement with the highest population growth! Additionally, with 825 residents in 1991, Donja Bistra was the largest settlement of those mentioned, and the only one with over 800 residents, so that many much smaller settlements recorded relatively high growth with considerably smaller absolute growth in the number of residents.

In conclusion, immigration in the modern period has made Donja Bistra the most demographically propulsive settlement in the western and northwestern sections of the Zagreb urban region. Donja Bistra has grown more quickly than, for example, Donji Stupnik and Sveta Nedjelja, settlements closer to Zagreb on major road transit hubs in the same sector of the urban region which, due to their economic dynamics, are often cited as "successful" settlements in the Zagreb environs. The example of Bistra shows that war and the migrations it caused played a very significant role in population development.

Interaction between Bistra and Zagreb as an indicator of suburbanization

An analysis of the labor function shows an intense orientation toward Zagreb, where 65.6% of the respondents and members of their households were employed in 2003, while only

half of this number were employed in Bistra and Zaprešić. This confirms that the links with Zagreb expressed by the share of daily commuters corresponds to Vresk's model (Vresk, 1997). At that time, between 50 and 70% of the active (employed) population worked in the core city (Vresk, 1997). There was a further attempt in the analysis to examine which central functions are used by the population of the Bistra Municipality and how much. The analysis encompassed provisioning of the population with goods to meet short- and long-term needs, culture, sports and recreation, while a separate question examined if the population shops in super-/hypermarkets and to what extent. The results show that the population largely obtains its goods to meet short-term needs in the municipality. In this sense, the municipality shows a degree of independence from Zagreb, while Zagreb absolutely dominates in meeting the population's medium- and long-term needs. If one adds to this the fact that almost one half of the respondents do most, almost all or all of their shopping in super-/hypermarkets (and these facilities are all located in Zagreb), then the domination of the core city comes to the fore even more. Zagreb additionally dominates in meeting the population's cultural needs.

The interaction between and, the authors would dare say, "dependence" of Bistra on Zagreb is more than apparent. Not only is the labor function very explicit, but also the functions of provisioning and meeting cultural needs. Provisioning of the population is one of the best indicators of Zagreb's centrality.⁸ In this regard, and with a view to the very dynamic nature and profitability of changes in location in retail sales under a market economy, the authors deem it important to stress that consideration of provisioning of the population should be encompassed in future research into the gravitational regions of core settlements.

CONCLUSION

The objective of this work was to examine the causes and contemporary tendencies of suburbanization of the Zagreb environs based on the example of the Bistra Municipality, and to examine and compare the attraction and functions of Zagreb as the core city and Zaprešić as a satellite center. An analysis of the census data and the data obtained by the survey leads to the following conclusions:

- Residential suburbanization was a key cause of Bistra's demographic expansion during the 1990s. It was mostly the result of immigration from Zagreb and Bosnia-Herzegovina.
- The settlement of Donja Bistra, due to its available construction land and the incentives offered by the local authorities, experienced the most intense demographic growth in the western and northwestern sector of the Zagreb urban region.

⁸ Pak stresses that provisioning of the population is one of the best indicators of the functional importance of a settlement (town/city) in space. This is because as opposed to other central functions (schooling, health-care, etc.) it is not tied to the administrative divisions of space, it is much more flexible and better reflects the strength of a gravitational region (Pak, 1977).

- The most important reason for immigration was the possibility of solving housing problems while maintaining employment in Zagreb. This was followed by “marriage.” Increased demand for construction land was also partially the result of immigration from Bosnia-Herzegovina spurred by the war.
- Bistra is “dependent” on Zagreb. Besides the labor function, the links between Bistra and Zagreb are the most obvious in provisioning, particularly in goods to meet medium- and long-term needs and in meeting needs for culture.
- Regardless of its proximity, in the aforementioned functions Zaprešić is a considerably weaker gravitational settlement.

Based on all characteristics indicated, the Bistra Municipality reflects a representative sampling of contemporary suburbanization tendencies in the Zagreb environs, and in Zagreb County. Population growth caused by intensified residential suburbanization during the 1990s has spurred the corresponding development of central functions and differentiated growth of production activities. The high degree of integration into Zagreb's daily urban system and the increasing development of the labor function in the municipal seat are reflected in the fast transformation of the population's socio-economic structure and the functional and physiognomic changes in municipal territories.

Similar developmental processes are reflected to a greater or lesser degree in the broader Zagreb environs. These also gradually altered the spatial relations between the core city and its urbanized surroundings. Such tenfold higher demographic growth in Zagreb County compared to the City of Zagreb and the ever greater allocation of functions (housing, provisioning, and, increasingly, labor) in the environs testifies to the fact that the suburbanization of Zagreb County during the 1990s assumed the features of the tertiary phase of urbanization, i.e. metropolitanization.

The relatively rapid growth of the population and (often contradictory) functions also intensified the pressure on limited spatial resources, particularly in the more accessible parts of Zagreb's nearer environs. This led to more frequent spatial conflicts reflected in environmental degradation in certain narrower sections of this zone. Such developmental tendencies placed the problems of a given area's carrying capacity in the forefront, as it indicates the need for consistent application of the principles of physical planning and organization in the future development of the Zagreb urban region and its urbanized environs.⁹ It is precisely the responsibility for planning at the local level (municipal physical plans), which implies arbitration in case of conflicts over various differing potential land-use methods (accompanied by gathering and analysis of all necessary information), that is one of the fundamental methods for solving contemporary problems experienced by suburban zones (Errington, 1994).

⁹ The fact that a part of the Bistra Municipality is located within the Medvednica Nature Park is an example of actual conflicts over land-use there. Deliberations are still under way on the possible construction of ski-slopes in a part of the Park which is protected as a forest park (Bistra-Markovčak Forest). The construction of ski-slopes would also entail the construction of new access roads (and large parking lots, and perhaps even ski-lifts) in the Bistra Municipality, which would probably lead to local economic growth and new employment, but also devastate the fragile environmental balance in the Medvednica Nature Park.

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