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DEMOGRAPHIC PROBLEMS IN THE CARPATHIAN REGION OF SERBIA

Vesna Lukić^{1*}

* Institute of Social Sciences, Demographic Research Centre, Belgrade

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Abstract: Eastern Serbia, including the Carpathian region, is an area that has been characterized by unfavorable demographic trends for decades. Low reproductive norms in terms of the cultural pattern of 'one child', applied from the middle of the 20th century and caused by economic reasons to preserve the estates and the mixed ethnic structure of the population, had the result that this area has had the lowest population growth in the country. The fact that the Carpathian Serbia has traditionally been emigration area is additionally contributed by the negative demographic processes such as depopulation, continuous increase in the average age of the population, more and more unfavorable ratio of young and old populations, reduction in the average population density and concentration of population in urban areas. For purposes of this study, values for the demographic indicators of the population of the Carpathian Serbia are calculated separately at the level of settlements, and in terms of its physical and geographic boundaries.

Key words: Carpathian region, population, emigration, depopulation.

Introduction

Carpathian region in Serbia covers an area of 13 municipalities (Bor, Boljevac, Golubac, Despotovac, Žagubica, Zaječar, Kladovo, Kučevo, Majdanpek, Negotin, Paraćin, Petrovac and Čuprija). The municipalities of Bor, Žagubica and Majdanpek belong to the Carpathian region in Serbia by the whole territory, while the other ten municipalities more or less spread in the zone of the Carpathians. Cultural heritage speaks about the continuity of settlement of this area since the Stone Age. Early population change of the Carpathian region in Serbia related to mineral deposits that attracted population. In the period of intensive industrialization in the 70s of the last century, the emigration of the population began from numerous rural mountain settlements of the Carpathian region. Population was moving to nearby towns, but also abroad. High national income in Bor and Majdanpek, which was above the average of the Republic of Serbia at that time, attracted labour from rural settlements. "The process of

¹ Correspondence to: vlukic@idn.org.rs

emigration from less developed areas began long ago as indicated by average annual rates of net migration of underdeveloped municipalities for the period 1961-1971. In the mentioned period, positive net migration only had at that time very strong industrial municipalities of Bor and Majdanpek" (Tošić, Lukić, & Ćirković, 2009).

Changed socio-economic conditions from the 90s of the 20th century, reflected in the stagnation of economic development of Bor and Majdanpek and in the ongoing process of privatization of Copper Mining and Smelting Complex Bor, led to further disruption of population potentials of this area. Today, Bor and Majdanpek municipalities have the national income index values of 45.2, that is, only 27.8 (level of the Republic of Serbia = 100). The lowest value of national income in the zone of the Carpathians, in comparison with the state level, is at Kladovo municipality (only 15.8) (Statistical Office of the Republic of Serbia, 2006). The weakening of the standard of living has also resulted in the emigration of population from urban settlements, so the average annual net migration rate in the period 1991-2002 for the towns of Bor and Majdanpek was -5.8 ‰, that is, even -19.06 ‰ (Statistical Office of the Republic of Serbia, 2003c).

According to the law on less-developed areas of the Republic of Serbia, there are even four municipalities of the Carpathian region in the group of less developed municipalities (Golubac, Žagubica, Kučevo and Petrovac) (Official Gazette of the Republic of Serbia, 1995). In the first decade of the 21st century, the decline in income was also caused by the attrition of professional staff, reduced or absent investments, gradual economic 'decline' of companies and unsolved legal and property relations in the contemporary privatization process, dilapidated equipment etc. These processes most affected centres in which the industry was the dominant sector (production of transport equipment, textile and metal industry). Thus, from the former 'industrial giants' some municipalities found themselves in the category of undeveloped municipalities or, if they already belonged there, their income significantly decreased (Bor, Priboj, Majdanpek, etc.). Some of the municipalities, according to the Spatial Development Strategy of the Republic of Serbia, belong to devastated areas, as a special form of underdeveloped municipalities (Majdanpek, Bor, Priboj, Prijepolje, Medvedja, Dimitrovgrad), with centres that were once the holders of the economic development of the wider area (Tošić et al., 2009). Devastated areas are identified by the Regulation on criteria and indicators for determining the devastated areas of the Republic of Serbia, and the Decision on determining the devastated areas of the Republic of Serbia (Official Gazette No. 58/04; Official Gazette No. 63/04).

Area and Population of the Carpathian Region of Serbia

In the zone of the Carpathians in Serbia, defined on the basis of the physical-geographical characteristics (*Study of the Extension of the Scope of Carpathian Convention in Serbia, 2006*), i.e. taking as the southern border of this area the Crni Timok river course, there are 171 settlements in which 224 036² inhabitants lived in 2002.

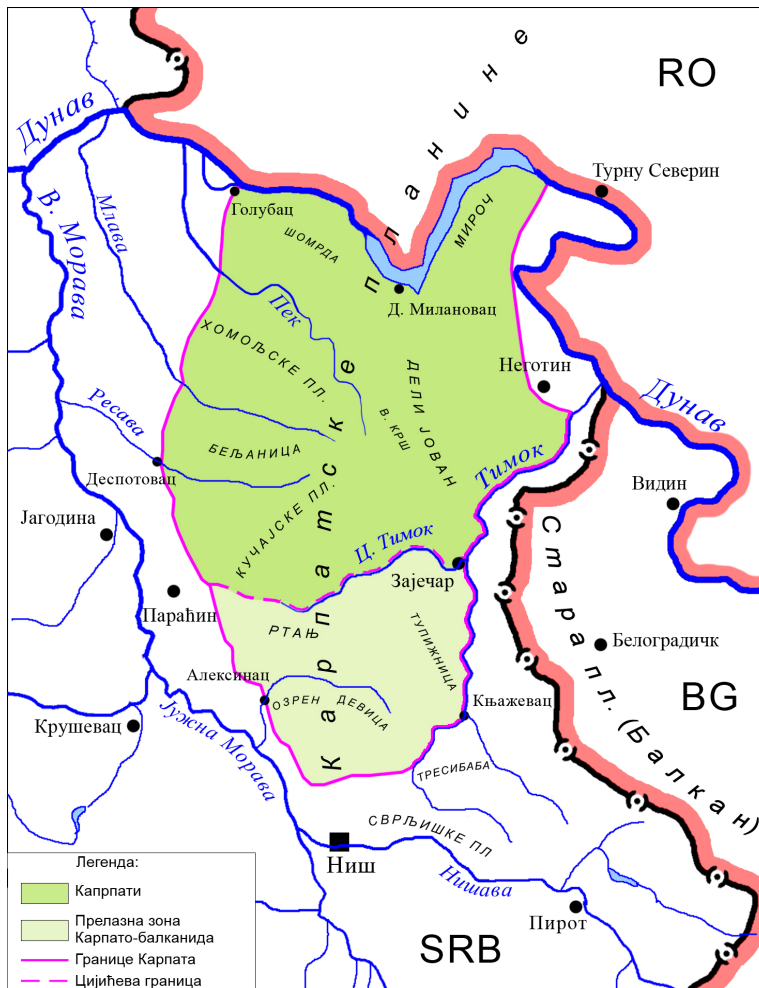


Figure 1. Charpatian Region of Serbia
(*Study of the Extension of the Scope of Carpathian Convention in Serbia, 2006*)

² Data on total population are given according to new census methodology from 2002.

Population density in the zone of the Carpathians, calculated on the basis of the sum of population of only those settlements in the Carpathian region and the sum of the areas of the parts of municipalities in the zone of the Carpathians, is averagely 35 persons per km².

Table 1. Municipalities of the Carpathian region in 2002

Municipality	Population in 2002	Population in zone of the Carpathians	Number of settlements	Number of settlements in zone of the Carpathians	Population density per/km ²	Population density in zone of the Carpathians
Bor	55 817	55 817	14	14	65	65
Boljevac	15 849	6 261	20	7	19	14
Golubac	9 913	4 191	24	7	27	17
Despotovac	25 611	19 649	33	23	41	39
Žagubica	14 823	14 823	18	18	20	20
Zaječar	65 969	51 068	42	17	62	121
Kladovo	23 613	6 406	23	10	37	16
Kučevo	18 808	16 182	26	21	26	25
Majdanpek	23 703	23 703	14	14	25	25
Negotin	43 418	14 930	39	25	40	19
Paraćin	58 301	2 898	35	4	108	15
Petrovac	34 511	4 669	34	6	53	32
Čuprija	33 567	3 439	16	5	117	42

Source of data: Statistical Office of the Republic of Serbia, 2003b; Statistical Office of the Republic of Serbia, 2006; Study of the Extension... , 2006; own calculations.

In the Carpathian parts, for municipalities that do not spread throughout the territory of the Carpathian region, population density is less than the value for the municipalities as a whole. The exception is Zaječar municipality which has higher population density in the part of the municipality that belongs to the Carpathian region. This is due to the fact that the municipal centre and the largest settlement of Zaječar is in the zone of the Carpathians, while of the total area of 1089 km², small part (only 422 km²) lies in the Carpathian zone. Population density observed in thirteen towns, calculated on the basis of the sum of the total population of the municipalities and the total municipal area, is averagely 45 per/km², which indicates a greater concentration of population outside the Carpathian region. Of the total population living in the area of the Carpathian region, the largest number is from Bor municipality (55 817 or 24.9%), while the majority of the Carpathian settlements is located in the territory of Negotin municipality (25 settlements or 14.6%). After the municipalities of Bor, Žagubica and Majdanpek, which participate with their total population in the population of the Carpathian region, the municipality of

Demographic problems in the Carpathian region of Serbia

Kučevo has the largest share of the population in the zone of the Carpathians (86%). The population of the municipalities of Bor, and Zaječar (47.7%) make nearly half the population of the zone of the Carpathians in Serbia, while from the municipalities of Paraćin and Ćuprija, the municipal centres of which are outside the study area, only 5% that is 10% of the total population is settled in the Carpathian region, which makes 1.3% that is 1.5% of the Carpathian population.

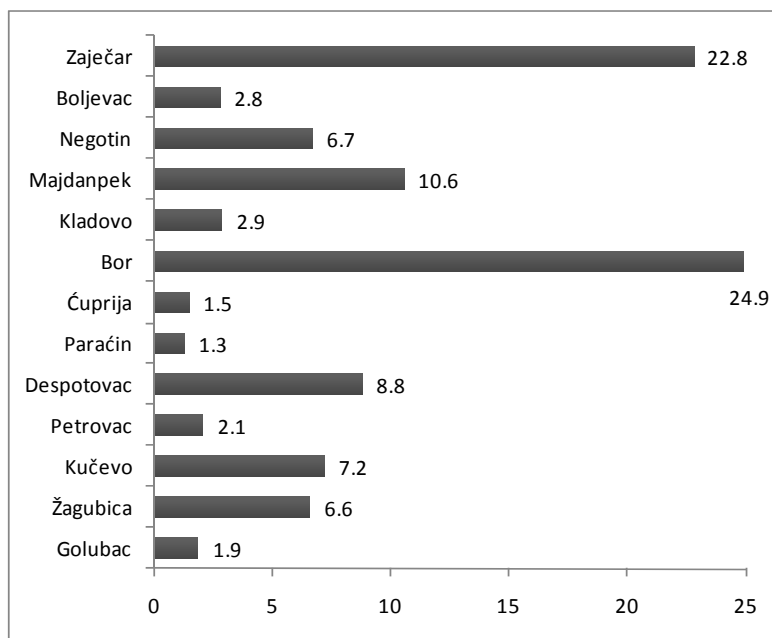


Figure 2. Per cent share of the population of municipalities in the total population of the Carpathian region of Serbia (2002)

Carpathian Serbia is mainly depression and mountain, which is reflected in the spatial organization of the settlement net in this area. Classification of the settlements of the Carpathian region by population size shows that settlements with small population dominate in the Carpathian Serbia, so that two-thirds of the settlements have up to a thousand people. In these rural settlements, the demographic vitality is the most vulnerable. The largest settlements are regional centres of Eastern Serbia, Zaječar and Bor, in which 35% of the population of the Carpathian zone in Serbia lives. Settlements of the Carpathian region had an average size of 1310 inhabitants in 2002. Despite the slight population growth during the period 1948-2002, the average population size of the Carpathian

settlements declined from 1371 to 1310³, which indicates a pronounced process of polarization of the population with a concentration of population in urban centres of municipalities.

Table 2. Classification of settlements of the Carpathian region according to population size, 2002

Population size of settlements (population number)	Number of settlements in 2002	Share in the total number of settlements (%)
<199	16	9%
200-499	56	33%
500-999	57	33%
1 000-1 999	28	16%
2 000-4 999	11	6%
>5 000	3	2%

Source of data: Statistical Office of the Republic of Serbia, 2003b; own calculations.

In the population structure of the Carpathian zone in Serbia according to the type of settlements, rural population is prevalent with 118 297 (52.8%) in comparison to urban population of 105 739 (47.2%). The largest urban settlements in the observed area are also the municipal centres of Zaječar, Majdanpek, Bor, Kučevo and Despotovac. Other urban settlements (Kučevo, Despotovac, Donji Milanovac, Resavica and Bogovina) have between 1 000 and 5 000 inhabitants (Statistical Office of the Republic of Serbia, 2003b). Bor and Zaječar make the net of towns in the Carpathian zone as regional urban centres - the area of influence covers the territories of at least three municipalities, with Majdanpek as urban centre with developed structure of services. There is even 13 002 commuters in the settlements of the Carpathian region. Bor and Majdanpek have the strongest area of influence in which one-third of commuters of the Carpathian region of Serbia work, while Zaječar, Mosna and Kučevo are smaller commuting centres who attract about 5% of the total number of commuters⁴.

Population Dynamics and Components of Population Change

The population in the zone of the Carpathians increased in the period 1948-2002 for 18 212 persons, that is, from 234 447 to 252 659⁵. Increase in population in

³ To calculate changes in the average number of inhabitants of the Carpathian settlements, data on total population are used according to the 2002 initial census results, for comparability with previous censuses.

⁴ Number of commuters of the Carpathian region and directions of commuting flows are calculated on the basis of database of Statistical Office of the Republic of Serbia on commuters in Serbia, according to the 2002 census.

⁵ Data on total number of inhabitants are given according to the 2002 initial census results, for comparability with previous censuses.

the Carpathian region by 8% in the mentioned period is most contributed by the population increase of the towns of Majdanpek, Bor, Zaječar and Despotovac, which enlarged population from three (Despotovac) to five times (Majdanpek). Depopulation is expressed in all other municipalities in the zone of the Carpathians, and the population decreased between 8% and 43% in the same period. Carpathian settlements of Negotin and Boljevac municipalities had the greatest population decrease.

Table 3. Population dynamics in the Carpathian region, 1948-2002

Municipalities	Population in the Carpathian zone in 1948	Population in the Carpathian zone in 2002	Population change index 48/02
Negotin	35 567	20 232	57
Boljevac	11 822	7 104	60
Ćuprija	6 030	4 315	72
Žagubica	22 015	16 892	77
Kladovo	10 231	8 096	79
Paraćin	3 993	3 266	82
Golubac	5 904	5 003	85
Petrovac	7 834	6 673	85
Kučevo	23 099	21 347	92
Despotovac	23 084	24 592	107
Majdanpek	19 610	24 867	127
Bor	34 831	57 140	164
Zaječar	30 427	53 132	175

Source of data: Statistical Office of the Republic of Serbia, 2004; own calculations.

The number of inhabitants of underdeveloped areas decreases averagely per year ten times more than the republic average (Tošić et al., 2009). Population potentials of only Carpathian part of Negotin municipality decreased over the past fifty years for even 15 000 inhabitants. Of the total number of Carpathian settlements, almost 23 settlements have had fewer people than they had in 1948 (Statistical Office of the Republic of Serbia, 2004). Therefore, the priority of sustainable population change of the entire region of the Carpathians in Serbia should be the preservation and improvement of demographic potentials, because the negative demographic indicators and trends of population change represent a significant obstacle to the socioeconomic development of this area. In rural settlements from the wider sphere of influence of towns, negative demographic trends have far-reaching economic consequences in particular for social and health care due to the pronounced ageing of the population. Direct realization of the social care for citizens, that is, providing services and solving the specific rights of individuals and families in the area of social care, is very complex function given the disadvantages of the social economic situation, which directly reflects the realisation of these rights. According to the data from the Centre for

Social Work in Petrovac, there is increasing trend in the number of users from nearly all categories (MSP NE SERBIA, 2009).

The municipalities of Boljevac, Golubac, Zaječar, Negotin and Petrovac have had continually negative population growth since the inter-censuses period 1961-1971. In the last decade of the 20th century, all municipalities in the zone of the Carpathians had negative population growth and negative net migration. The exception is Zaječar municipality where 100 more people moved in than out in the mentioned period. According to the negative values of the population growth, municipalities in the zone of the Carpathians are among the leading ones in Serbia because of the constant reduction of birth rates and increasing mortality rates due to the increase in the average age of the population. Population natural regeneration is affected most in the municipalities of Boljevac and Zaječar where the average annual rate of natural increase in the period 1991-2002 amounted to -9 ‰ that is -6.9 ‰ (average for Serbia is -2.1 ‰) (Statistical Office of the Republic of Serbia, 2003c).

Table 4. Contribution of population growth and migrations to population change in municipalities in the Carpathian region (average annual rate)

Municipality	Population growth	1961-1971		1991-2002		
		Natural increase	Migration balance	Population growth	Natural increase	Migration balance
Bor	19.8	6.1	13.7	-5.7	-0.6	-5.1
Boljevac	-12.0	-0.7	-11.2	-13.7	-9.0	-4.7
Golubac	-7.4	-0.2	-7.2	-8.5	-3.5	-5.0
Despotovac	-4.5	5.6	-10.1	-9.3	-2.9	-6.3
Žagubica	-6.8	2.7	-9.6	-10.8	-4.8	-6.0
Zaječar	6.4	-1.2	7.6	-6.8	-6.9	0.1
Kladovo	16.5	7.8	8.7	-11.2	-2.1	-9.1
Kučevo	-4.6	1.7	-6.3	-13.2	-3.0	-10.2
Majdanpek	12.7	10.1	2.6	-11.7	-0.1	-11.6
Negotin	-2.6	-1.5	-1.1	-13.1	-6.4	-6.7
Paraćin	5.1	4.6	0.5	-3.4	-2.6	-0.8
Petrovac	-2.3	-1.1	-1.2	-9.2	-4.5	-4.7
Ćuprija	7.1	3.9	3.2	-4.6	-2.6	-2.0

Source of data: Statistical Office of the Republic of Serbia, 2003c; own calculations.

Carpathian region in Serbia has been characterized for a longer period of time by negative values of the natural component of population change, which is the result of a broadly represented system of one child in the family as characteristic of Eastern Serbia. Exploring the type of family in the regions of the early appearance of low birth rate in Serbia, Djordjević notes that this has been the characteristic of the population in Eastern Serbia which formation was not crucially influenced by immigration from parts of the western and Dinaric

regions and for which extended family groups were not typical (Djordjević, 1992). According to data from survey conducted in 1950, in Zaječar district low birth rate was caused by deliberate restriction of birth as women declared. Since the early 20th century, the system of only child was created which resulted from desire to not to share the property and to leave all to one child. A habit that is deeply rooted was mentioned to be the reason for women not to raise more children, and the woman who wanted to raise more children than determined by the unwritten law was exposed to scorn and derision. Therefore, only newcomers (teachers, priests, etc.) had more children in these villages (Vukanović, 1965).

This area has also traditionally been an emigration area. The municipalities of Boljevac, Golubac, Despotovac, Žagubica and Kučevo have had negative net migration in all inter-census periods since the decade 1961-1971 (Statistical Office of the Republic of Serbia, 2003c). In 2002, 11% of the total population of the Carpathian region that is 28 623 people worked abroad more than one year. Most of the population working abroad is from the Carpathian settlements of the municipalities of Petrovac (30% of the total population of the municipality in the zone of the Carpathians), Negotin (26%) and Kučevo (24%). These values are far above the average values for the level of Serbia (without Kosovo and Metohija), where 5% of the population were working abroad in 2002. It is estimated that about 12 000 inhabitants from Petrovac on the Mlava work abroad (MSP-NE SRBIJA, 2009). Moreover, the specifics of Eastern Serbia must be concerned regarding the origin and composition of the population. M. Kostić singled the Carpathian-border area population-compositional region out as one of three regions in Eastern Serbia according to the mentioned indicators. It covers an ethnically mixed Serbian and Vlach population, mainly within the limits of extending of the Vlach ethnic substrate (Kostić, 1974). After the Serbs, the Vlachs make the largest ethnic group in the region, 27 401 or 12.2% of the total population. Vlach population represents a majority in 23 Carpathian settlements⁶ while other ethnic groups are represented with less than 1% in the Carpathian population (Statistical Office of the Republic of Serbia, 2003a). From some of the Carpathian rural settlements of the municipalities of Kladovo and Negotin, which have a more expressed share of the Vlach population in the ethnic structure, more than half of the population was out of the country in 2002 (Kupužište, Slatina, Urovica) (Statistical Office of the Republic of Serbia, 2003a; Statistical Office of the Republic of Serbia, 2003b).

⁶ Recorded increase in the number of the Vlach in Serbia in the period 1991-2002 is more the consequence of determination than of the birth rate increase.

Effects of long-term large-scale emigration have reflected in the population natural regeneration, as well as disorders in the population structure. This is an area with high average age of the population. The average age of the population of municipalities that are spread in the zone of the Carpathians is 42.9 years. The average age exceeds 40.2 years (which was the average age of population in Serbia in 2002) in all municipalities, except in the municipalities of Bor and Majdanpek where the population has 39.4 that is, 39.2 years on average. Almost 29 Carpathian settlements have the population that is over fifty years of age averagely, wherefrom the largest number is in Negotin municipality (14 settlements). In the zone of the Carpathians, the oldest average population is in the settlements of Krivi Vir in the territory of Boljevac municipality (60.2 years) and Tamnič in Negotin municipality (60.3 years) (Statistical Office of the Republic of Serbia, 2003b). The negative effects of established trends of natural and migration components of population change are reflected in the total population potentials influencing the course of the demographic and overall development of this area.

Conclusion

Given the current state and tendencies of negative elements of the population change of the Carpathian region (continuous negative natural increase of population and extremely high rate of emigration), which are reflected in the depopulation of rural settlements and changes in the structure and the territorial disposition of the population, measures of population policy are necessary that will affect to mitigate the unfavourable trends of population change. Measures and activities of socio-economic and population policy (creating favourable conditions for life and work) may be carried out only together, for the renewal of working population contingent and the future population change of this area are of crucial importance for its overall development. Encouraging economic development could stimulate the part of the population working abroad (which is making significant population potentials of the Carpathian region) to return, which would significantly contribute to sustainable population change of the Carpathian region of Serbia. For more intensive economic development in this area, proper directing of migrant remittances is important, which could represent a significant source of capital, given the number of population of this region working abroad. The inflow of foreign remittances and foreign direct investments should be directed to productive purposes.

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