

SPATIAL AND DEMOGRAPHIC DEVELOPMENT OF SETTLEMENTS IN THE SOUTHERN PART OF THE LJUBLJANA URBAN REGION

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Abstract

The objective of the article is the analysis of population change and spatial development of the settlements in the southern part of the Ljubljana urban region. This part was defined as the area comprising the municipalities of Borovnica, Brezovica, Log-Dragomer, Ig and Škofljica. It can be divided into nearby suburbs, suburbanised settlements, and rural settlements. The question was if there were differences in the population and spatial development of settlements and, if there were any significant changes in the population development of settlements after 2002.

Key words: Ljubljana, Ljubljana urban region, suburbanisation, periurbanisation, suburb, suburbanised settlement, rural settlement

PROSTORSKI IN PREBIVALSTVENI RAZVOJ NASELIJ V JUŽNEM DELU LJUBLJANSKE URBANE REGIJE

Izvilleček

Prispevek prinaša rezultate analize spreminjanja števila prebivalstva in sočasnega prostorskega razvoja naselij južnega dela Ljubljanske urbane regije, ki smo ga opredelili kot območje občin Borovnica, Brezovica, Log-Dragomer, Ig in Škofljica. To območje vključuje ožje suburbanizirano obmestje, širše obmestje in podeželska naselja. Želeli smo ugotoviti, ali se dinamika spreminjanja števila prebivalstva in prostorski razvoj naselij razlikujeta. Zanimalo nas je tudi, ali je v primerjavi z obdobjem pred letom 2002 prišlo do pomembnejših sprememb v gibanju in težnjah spreminjanja števila prebivalstva.

Gljučne besede: Ljubljana, Ljubljanska urbana regija, suburbanizacija, periurbanizacija, obmestje, podeželsko naselje

I. INTRODUCTION

The Ljubljana urban region shows the fastest growing population of all Slovenian regions. From 1995 to 2011, the population in the region grew from 485,000 to 535,000, for an increase of about 10%. Population growth was especially intensive between 2005 and 2010, when it increased by 42,000 people (Statistical yearbook 2012, 2012). Population growth was caused mainly by a positive migration balance: more people have moved into the region than out of it since 1991 (Rebernik, 2004). This positive migration balance is due to above-average economic growth, a relatively good supply of jobs, and demand for labour (Rebernik, 2004). Migrants into the region have come from other Slovenian municipalities as well as from foreign countries. After 2009, the rate of immigration into the region declined, due to the economic crisis and a reduced supply of jobs¹, such that most of the growth in population was accounted for by positive natural increase². Above-average natural increase of the population in the region compared to Slovenia as a whole is the result of a relatively favourable age structure of the population.

Population migration also takes place between different areas within the Ljubljana urban region. The main migration movement remains out-migration of the population from Ljubljana and other urban settlements to suburbanised areas and rural settlements in the region. In the period prior to 1995, population growth was fastest in the nearby suburbs, which were spatially contiguous with the city of Ljubljana. For the period between 1995 and 2002 we found that the population also increased rapidly due to in-migration in some rural settlements in the region (Rebernik, 2004). The rapid growth of the population in the wider rural hinterland of the region continued after 2002 as well. Over the past decade, typical suburbanisation and population growth in nearby suburbs has thus given way to periurbanisation, characterised by intensive population growth in rural settlements. In the 1970s and 1980s the most intensive in-migration took place primarily in the northern and north-western part of the region, while after 1991 it also intensified in the southern and eastern suburbs. From 2002 to 2011 the fastest population growth characterized the southern part of the region: the municipalities of Brezovica, Ig, Škofljica, and Grosuplje.

The primary objective of this paper is to provide an analysis of the changes in the population and concurrent spatial development and transformation of settlements in the southern part of the Ljubljana urban region. This part is defined as the area of the municipalities of Borovnica, Brezovica, Log-Dragomer, Ig, and Škofljica. Since we did not want to include urban settlements in the analysis, we excluded the municipalities of Vrhnika and Grosuplje. The area of the municipalities listed includes nearby suburbs, suburbanised settlements and rural settlements. In this study we attempted to determine whether there are differences in the population change and spatial development of settlements among the areas so defined. We were additionally interested in whether there were any important changes in population trends compared to the period before 2002.

1 In the years 2008 and 2009 the positive migration balance achieved a value of 21‰ and 13‰, respectively, while in 2010 and 2011 it was only 2.4‰ and 2.0‰, respectively.

2 The natural increase of the population in the region after 2008 was about 4.0‰.

In Slovenia, suburbanisation is also accompanied by intensive morphological, functional, and socio-economic transformation of settlements. In this study we attempted to identify the basic characteristics of morphological and socio-economic transformation of settlements.

2. SUBURBANISATION IN SLOVENIA: THEORETICAL BASES AND RESEARCH TO DATE

The study of suburbanisation and resultant transformations of rural settlements has a long tradition and important place in Slovenian geography. Of particular interest has been the issue of the transformation of suburbanised settlements due to the influence of cities. The relationships between city and countryside and the formation of the transitional zone between urban and rural areas were studied by V. Kokole (1969) as far back as in the 1960s. He was especially interested in the influences of the city on rural areas, the boundaries between urban and rural areas, the rural-urban fringe, and transformation and development in the vicinity of cities (Ravbar, 1994, p. 102). Kokole (1969) used the term *rural-urban continuum* for the transitional areas between the city and the countryside (Kokole, 1976).

In the 1970s and 1980s many other authors began to study urbanisation and rural transformation. Following the example of the foreign geographical literature regarding the relocation of the population and the transformation of rural areas under the influence of nearby cities, the term suburbanisation gained use. In Slovenia the researcher most involved with the problems of (sub)urbanisation and the influence of cities on the transformation of suburban settlements and rural areas was M. Ravbar. Suburbanisation is defined as the spread of contemporary forms of settlement with a lower density in the area of influence of cities. Characteristic of suburbanisation is that it spreads into formerly rural areas (Ravbar, 1997, p. 107). Under Slovenian conditions suburbanisation means above all the physical, social, and frequently also functional transformation of rural settlements.

Ravbar (2005, p. 32) distinguishes three aspects of the conceptual understanding of suburbanisation: physiognomic (the dispersal of settlement forms, the spread of urban forms of residence, changes in land use), functional (the de-concentration of urban functions) and social (the adoption of values, patterns of behaviour, and consumer habits of urban households in the suburbs).

Along with this it is necessary to emphasise that there has been no clear distinction in Slovenian geography between suburbanisation in the sense of the expansion of urban areas and the formation of suburbs as an extension of the city, and the expansion of areas of residence into rural settlements which are not spatially contiguous with the city, and for which we could use the term periurbanisation. Suburbanisation thus represents the urbanisation of the immediate urban fringe in the form of typical residential suburbs (*suburbia*), while periurbanisation is the urbanisation of the broader rural hinterland of a city, in the form of sparse and relatively dispersed settlement over an area, accompanied

by the economic, social, and physical transformation of rural settlements. Areas of periurbanisation thus have three basic features: more recent migration, a large share of daily commuters to jobs in the centre of the urban region, and functional attachment to the city (Brunet, Ferras, Thery, 1992).

In this article we will attempt to determine whether a distinction between suburbanisation and periurbanisation is also indicated in Slovenian circumstances, based on the analysis of the population and spatial development of settlements in the southern part of the Ljubljana urban region.

3. DATA AND METHODOLOGY

Research on the change in the size of the population was based for the most part on data for settlements published by the Statistical Office of the Republic of Slovenia (Popis 1991; Popis 2002; Številó ..., 2011). Spatial transformation of settlements was investigated through data on housing construction (Dokončana ..., 2012), on locations of house numbers (EHIS, 1991), and on building cadastre (Kataster stavb, 2011). Geoinformatic analysis has been applied to estimate the built-up area on the basis of the contours of buildings from the building cadastre in order to carry out the estimate of changes aggregated by settlements. Since we did not have comparable data for 1991 on the form and position of buildings, we used the following procedure to estimate built-up areas. Using GIS tools, we determined which buildings from the building cadastre of 2011 spatially overlapped with the locations of house numbers from 1991. Spatial overlapping was defined such that the location of the house number is located within the area (layout) of the building. Possible errors in this kind of estimate are as follows. The location of the house number from 1991 does not overlap spatially with any building from the building cadastre from 2011. Although this can mean that the building was pulled down, it is more likely that there was a mistake in position recorded in the older data regarding the location of house numbers, as we have found in working with this data in other studies (Krevs, 2004). The result of this error was a lower estimate of built-up areas in 1991. Another deficiency of the method is the assumption that the layouts of the building in 1991 are the same as in 2011. In cases where the floor plan has changed, it has most likely been in the form of extension, which is consequently reflected in an overestimate of built-up areas in 1991. The third problem with the method is the result of illegal construction and retroactive legalisation of house numbers in the past, especially in areas of second homes. It is thus possible that there are no data on the location of house numbers from 1991, even though there did in fact already exist a building at that location, which would potentially contribute to an underestimation of built-up areas in 1991. Despite the problems noted, it is our view that the method provides satisfactory results for an estimate of changes in total built-up areas by settlement.

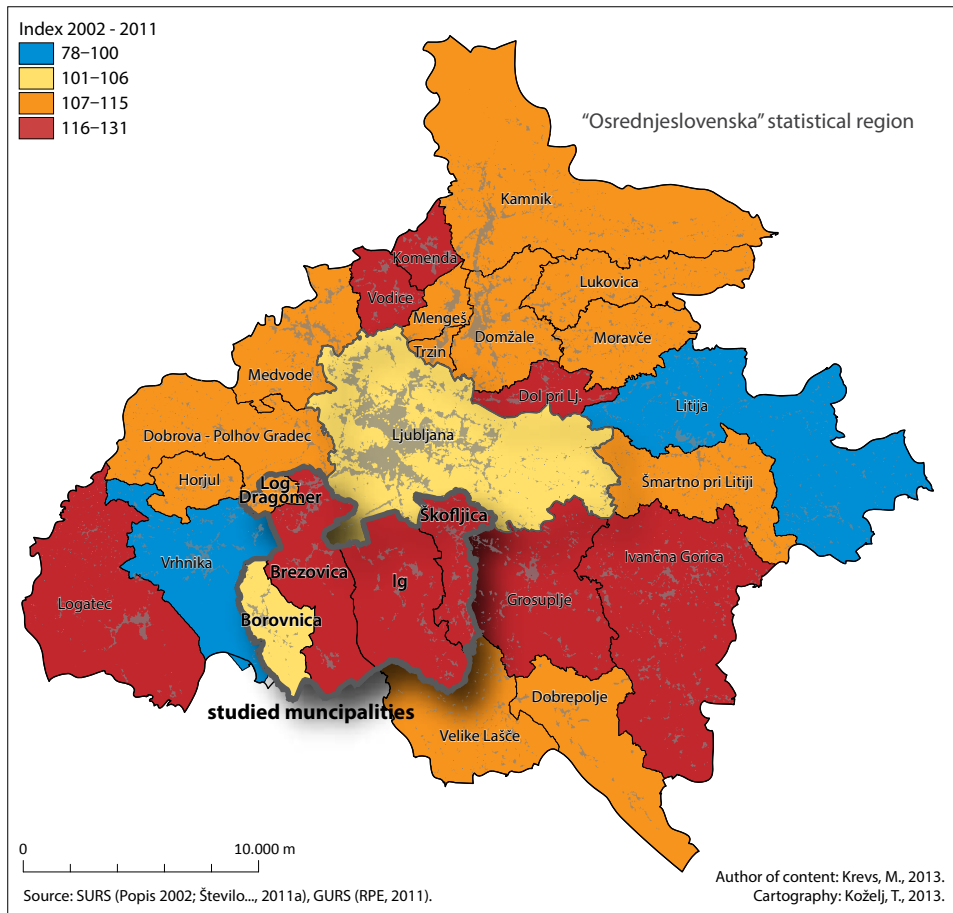
For the qualitative study of more detailed morphological transformation we also used the time sequence of high resolution satellite images (these images for the area studied are from the satellites GeoEye-1 and WorldView-2) using the web tools of Google Earth.

4. THE DYNAMICS OF CHANGE IN THE SIZE OF THE POPULATION IN THE LJUBLJANA URBAN REGION

The Ljubljana urban region (LUR) is the largest urban region in Slovenia with a population of 535,000 (2012). In 1995 there were only about 485,000 inhabitants in the region, hence the LUR has the fastest population growth of any Slovenian region. Up until the mid-1970s the population grew primarily in Ljubljana and a few satellite towns, e.g. Domžale, Vrhnika, and Medvode. From 1987 on, the city of Ljubljana has shown a negative migration balance. Whereas from 1981 to 1991 the population

Figure 1: Changes in population size in Ljubljana urban region from 2002 to 2011, by municipalities

Slika 1: Spremembe v številu prebivalcev po občinah med letoma 2002 in 2011 v Ljubljanski urbani regiji



of Ljubljana grew by 11,000 people, or by 4%, between 1991 and 2002 the number of inhabitants declined from 267,000 to 258,000, or by more than 3%. After 1971, and especially pronounced in the decade from 1981 to 1991, population growth also intensified in nearby suburbanised areas of Ljubljana, due mainly to in-migration. Population growth during the period cited was more pronounced in the northern and north-eastern suburbs, particularly in the area of the Kamniška Bistrica plain (Rebernik, 2004, p. 93).

Intensive physical growth of suburban settlements led to growth spilling over into neighbouring settlements, most strongly in the flat and economically more developed northern and north-eastern suburbs of Ljubljana (Ravbar, 2002, p. 222). In the 1990s, the movement of the population into the wider suburbs of Ljubljana intensified, and pronounced growth of population in some rural settlements began. In comparison with the period from 1981 to 1991 the region of population growth expanded spatially from the narrower and densely settled suburbs into the rural areas. New settlement in rural areas was dispersed, often outside or at the edge of existing rural settlements (Rebernik, 2004, p. 94). In contrast to the situation in the 1970s and 1980s, strong population growth since 1991 has also been recorded in the eastern and southern part of the region. In this way the largest suburbanised area in Slovenia took shape in the wider vicinity of Ljubljana. Ravbar has divided the Ljubljana urban region into nearby suburbs, comprising 66 settlements, suburbanised settlements (260), and the remaining rural settlements. In 2000, about 300,000 inhabitants lived in Ljubljana and other cities, about 140,000 lived in suburban settlements, and somewhat more than 70,000 in rural settlements (Ravbar, 2002, p. 224).

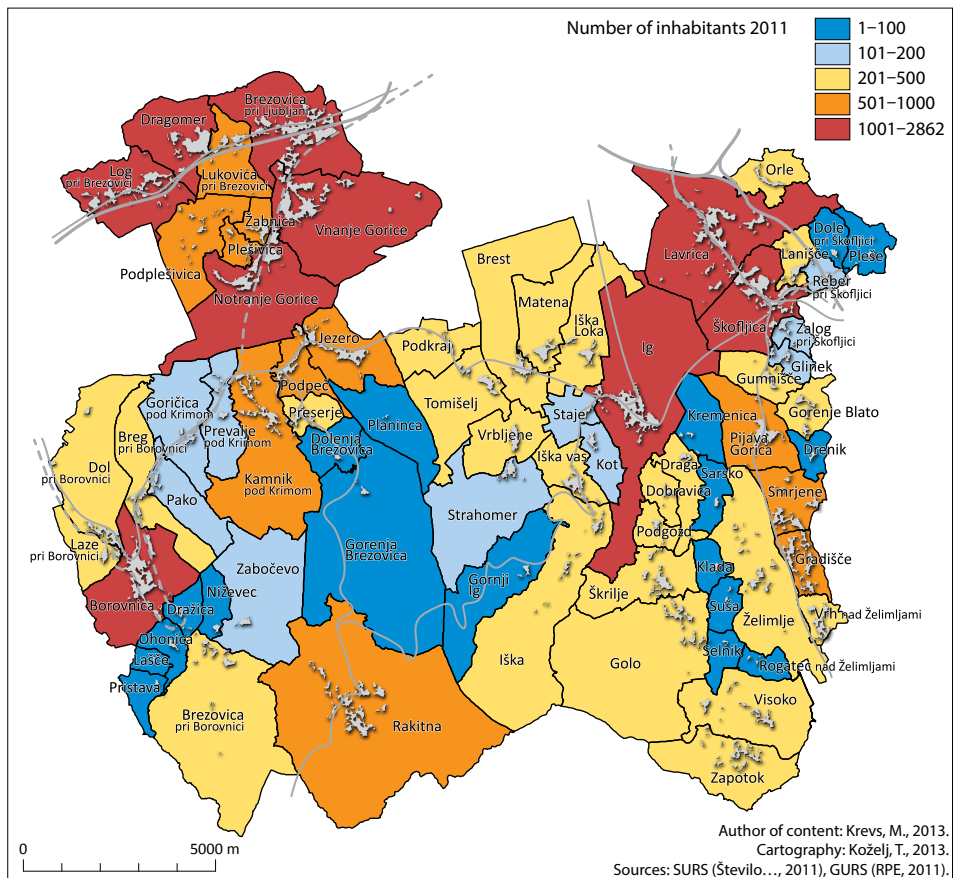
Population growth in suburban as well as some rural settlements in the region continued also after 2002. Of all the municipalities in the region, the population declined from 2002–2011 only in the municipalities of Litija and Vrhnika; the most rapid growth was recorded in the municipalities of Logatec, Brezovica, Ig, Škofljica, Grosuplje, Trzin, Vodice, and Komenda. From 2005 to 2012, the Ljubljana Urban Municipality of (LUM) again recorded population growth after a relatively long period of declining population size. The number of inhabitants in the LUM thus increased from 267,000 in 2005 to 280,000 in 2012, or by about 5%. This increase was due mainly to growth in housing construction and consequently a greater supply of housing in the city of Ljubljana. Along with the process of suburbanisation and periurbanisation, there was also reurbanisation in the region. As the model of the urbanisation cycle explains (Berg, Klaassen, 1978; cv: Rebernik, 2008, p. 59), every urban region experiences four phases of urbanisation (urbanisation – suburbanisation – deurbanisation – reurbanisation), which are based on the direction and intensity of migration between the city, the suburbs, and rural areas. Particular processes presented in the model as successive phases can also take place simultaneously (Rebernik, 2008, p. 60), which is also demonstrated by population change in the LUR.

5. CHANGES IN POPULATION SIZE IN THE SOUTHERN SUBURBANISED SETTLEMENTS OF THE LJUBLJANA URBAN REGION

The largest contiguous area of rapid population growth between 1991 and 2011 took shape in the southern part of the LUR, between the municipality of Brezovica in the west and the municipality of Grosuplje in the east. These are typical suburban municipalities which include the southern suburbanised settlements of Ljubljana and in part also rural settlements in the Ljubljana Marsh and the surrounding hills (Polhov Gradec, Krim and Posavje Hills).

In this study, in addition to the municipalities listed we also included the municipalities of Borovnica and Log-Dragomer in order to round out the area spatially, and excluded

Figure 2: Number of inhabitants in the settlements in the study area in 2011
Slika 2: Število prebivalcev po naseljih v preučevanem območju v letu 2011



the municipalities of Vrhnika and Grosuplje with larger urban settlements. In the area so delineated, the population between the years 1991 and 2011 grew by 11,243 people, or 47%, and between the years 2002 and 2011 by 5903 people or 20% (Table 1). Thus, this part of the LUR ranks among areas with the most rapid population growth in Slovenia. It represents a typical area of suburbanisation, which can be divided into several sub-areas based on selected criteria.

Based on the methodology developed by Ravbar (1997; 2002), settlements can be divided into three types: nearby suburbs (which include the settlements of Brezovica, Dragomer, Lukovica pri Brezovici, Log pri Brezovici, Vnanje Gorice, Podplešivica, Plešivica, Žabnica, Notranje Gorice, Lavrica, Škofljica, Lanišče, and Zalog pri Škofljici), suburbanised settlements (35), and rural settlements (27).

*Table 1: Changes in population size from 1991 to 2011 by municipalities
Preglednica 1: Spremembe v številu prebivalstva med letoma 1991 in 2011 po občinah*

Municipality	Number of inhabitants			Index		
	1991	2002	2011	1991/2002	2002/2011	1991/2011
Borovnica	3,579	3,839	3,995	107	104	111
Brezovica	7,699	9,334	11,246	121	120	146
Log-Dragomer	2,954	3,356	3,628	113	108	122
Ig	4,534	5,445	6,847	120	125	151
Škofljica	4,987	7,119	9,280	142	130	186
Skupaj	23,753	29,093	34,996	122	120	147

Sources/Viri: Popis 1991; Popis 2002; Število prebivalcev po občinah ..., 2011a

A survey of the changes in population size between the years 1991, 2002 and 2011 shows that the growth in population was highly uneven in different settlements. Throughout the whole of the period studied the following trends are evident:

- The greatest relative growth in population (index over 180) was characteristic of rural settlements, especially Iška, Golo, Škrilje, Podgozd, Dobravica, Draga, Visoko and Zapotok in the municipality of Ig, and Smrjene, Gradišče and Vrh nad Želimljami in the municipality of Škofljica.
- An above average relative growth in population (index between 140 and 180) was characteristic of some settlements in nearby suburbs, especially Brezovica and Log pri Brezovici in the municipality of Brezovica, and Lavrica in the municipality of Škofljica, and of some suburbanised settlements, e.g. Kamnik pod Krimom in the municipality of Brezovica, and Pijava Gorica, Glinek, Gumnišče, and Gorenje Blato in the municipality of Škofljica.
- The greatest absolute growth in population was on the other hand typical of the larger settlements in nearby suburbs, especially Brezovica, Log pri Brezovici, and Lavrica, and of some rural settlements (Smrjene, Gradišče, Rakitna).

A survey of changes in population size by settlement shows that the most intensive population growth was characteristic of two areas: on the one hand, rapid population growth is continuing in nearby suburbs, while on the other for the period after 1990 a new process of rapid growth in population is characteristic of some rural settlements (Figures 3–6).

Figure 3: Change in population size by settlements between the years 1991 and 2011 (index)
 Slika 3: Spremembe v številu prebivalcev po naseljih med letoma 1991 in 2011 (indeks)

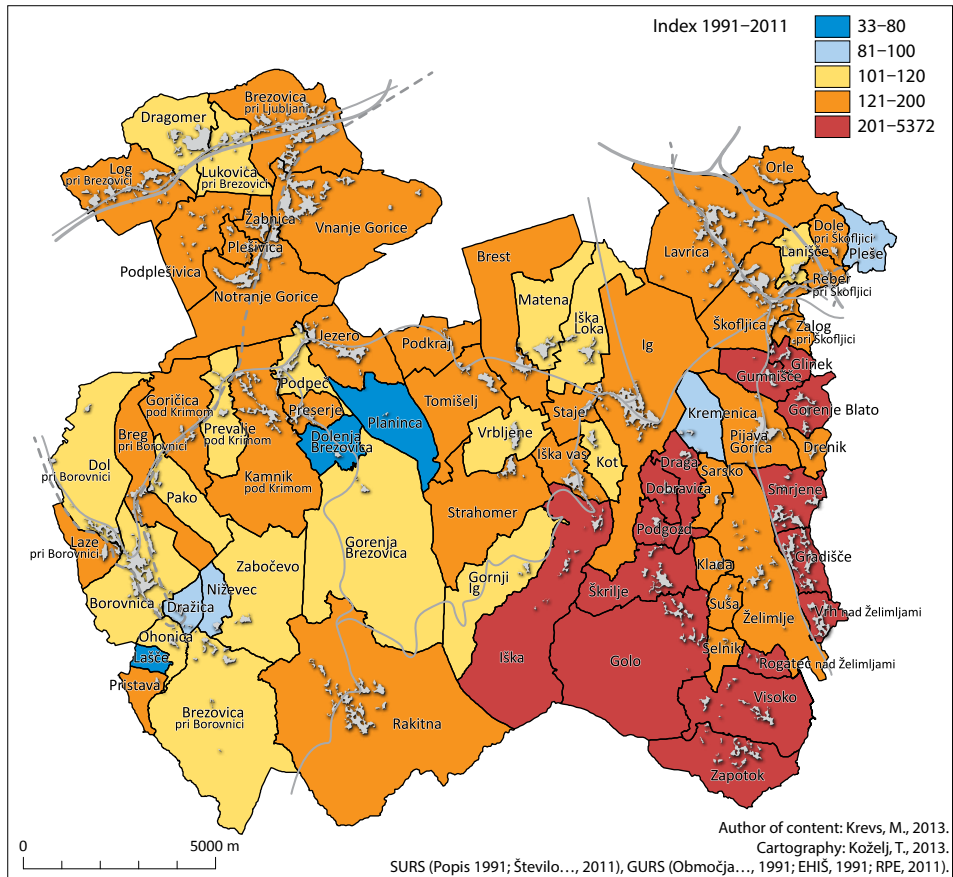


Figure 4: Change in population size by settlements between the years 1991 and 2011 (absolute growth)

Slika 4: Spremembe v številu prebivalcev po naseljih med letoma 1991 in 2011 (absolutni prirast)

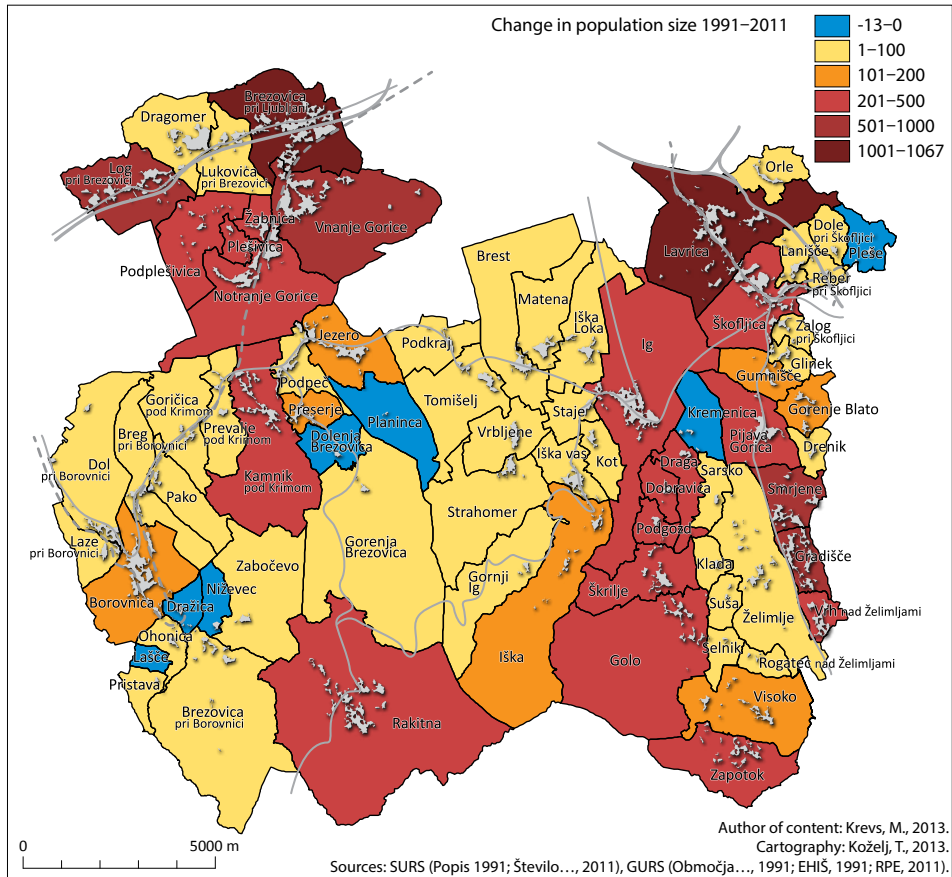


Figure 5: Change in population size by settlements between the years 2002 and 2011 (index)
 Slika 5: Spremembe v številu prebivalcev po naseljih med letoma 2002 in 2011 (indeks)

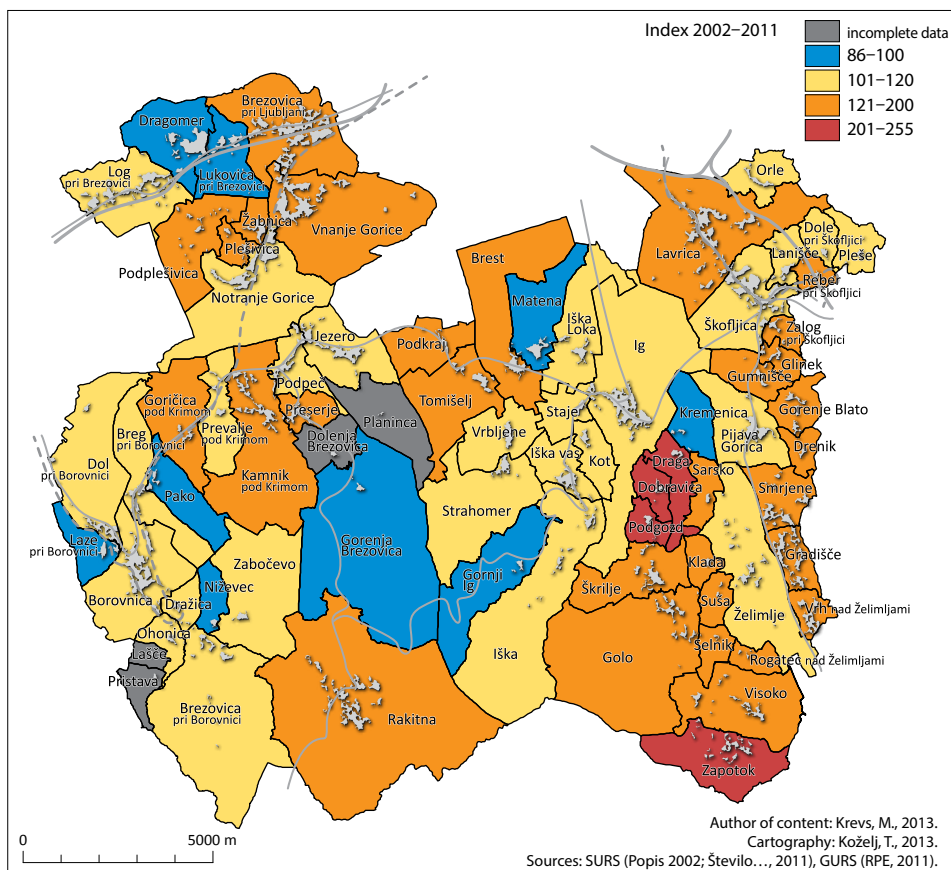
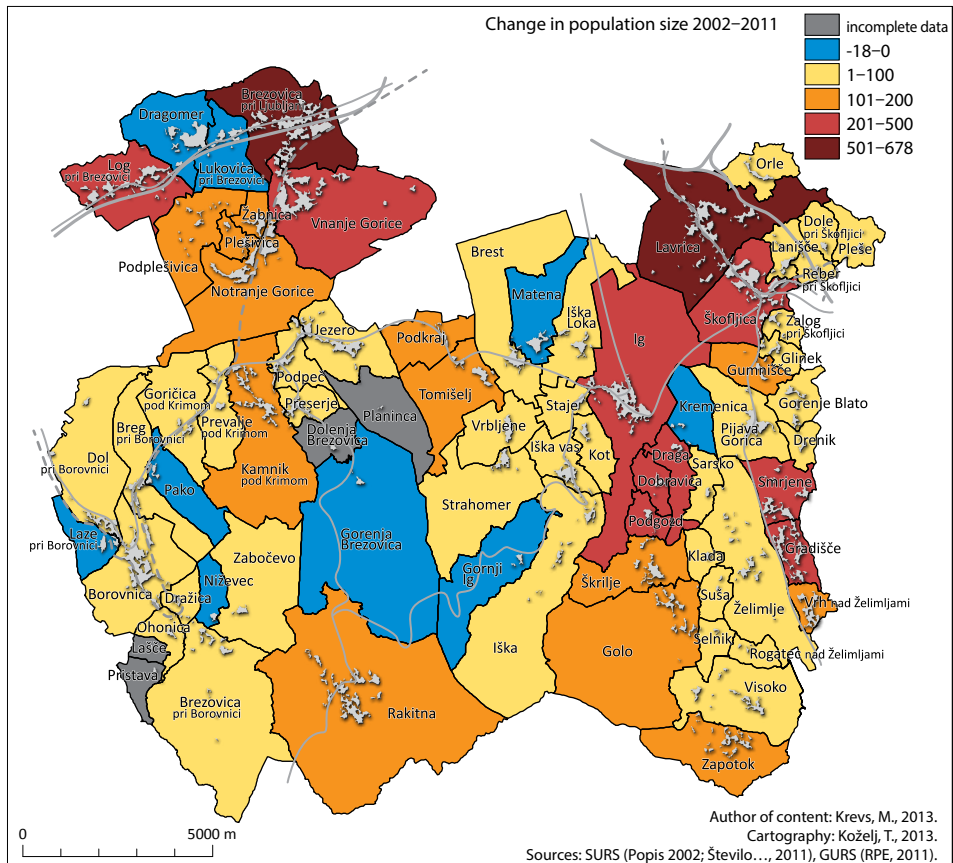


Figure 6: Change in population size by settlements between the years 2002 and 2011 (absolute growth)

Slika 6: Spremembe v številu prebivalcev po naseljih med letoma 2002 in 2011 (absolutni prirast)



6. SPATIAL DEVELOPMENT OF SETTLEMENTS IN THE SOUTHERN PART OF THE LJUBLJANA URBAN REGION

Population growth is accompanied by intensive spatial development and expansion of settlements. In the continuation of this paper we will describe in more detail some of the most characteristic processes in the spatial development of settlements. There was a strong increase in the extent of built-up areas throughout the entire area studied. An especially strong relative increase in the extent of built-up areas characterises the rural settlements in the municipalities of Škofljica and Brezovica. The largest increase of house numbers was in both areas of the most rapid population growth: in nearby suburbs and rural settlements.

Figure 7: Housing constructed between 2002 and 2012 by municipalities
Slika 7: Stanovanja, zgrajena med letoma 2002 in 2012 po občinah

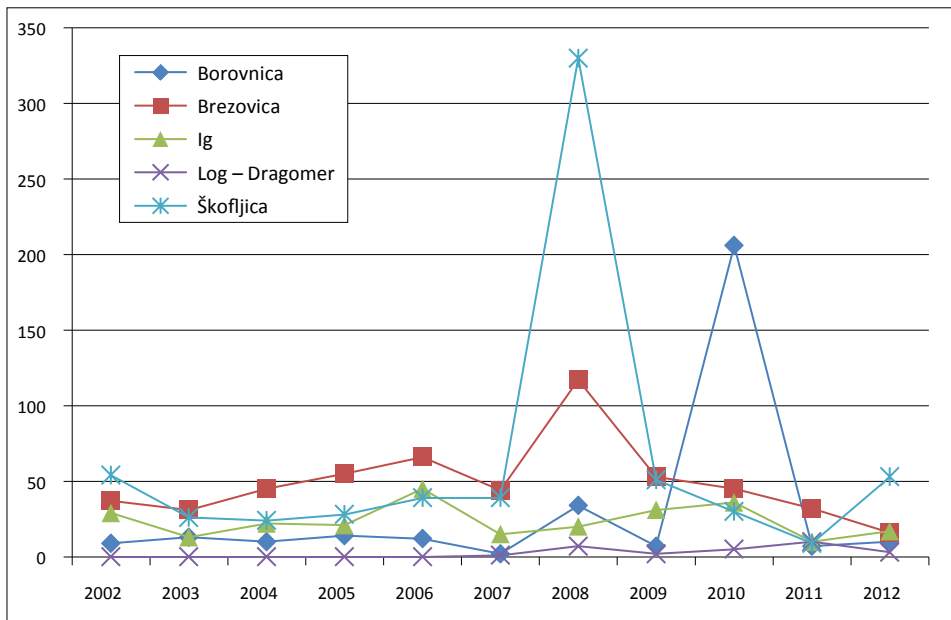


Figure 8: Estimate of the extent of the expansion of built-up areas: estimate of the index of change in the number of house numbers between 1991 and 2011

Slika 8: Ocena obsega širjenja pozidanih površin: ocena indeksa spremembe števila hišnih števil med letoma 1991 in 2011

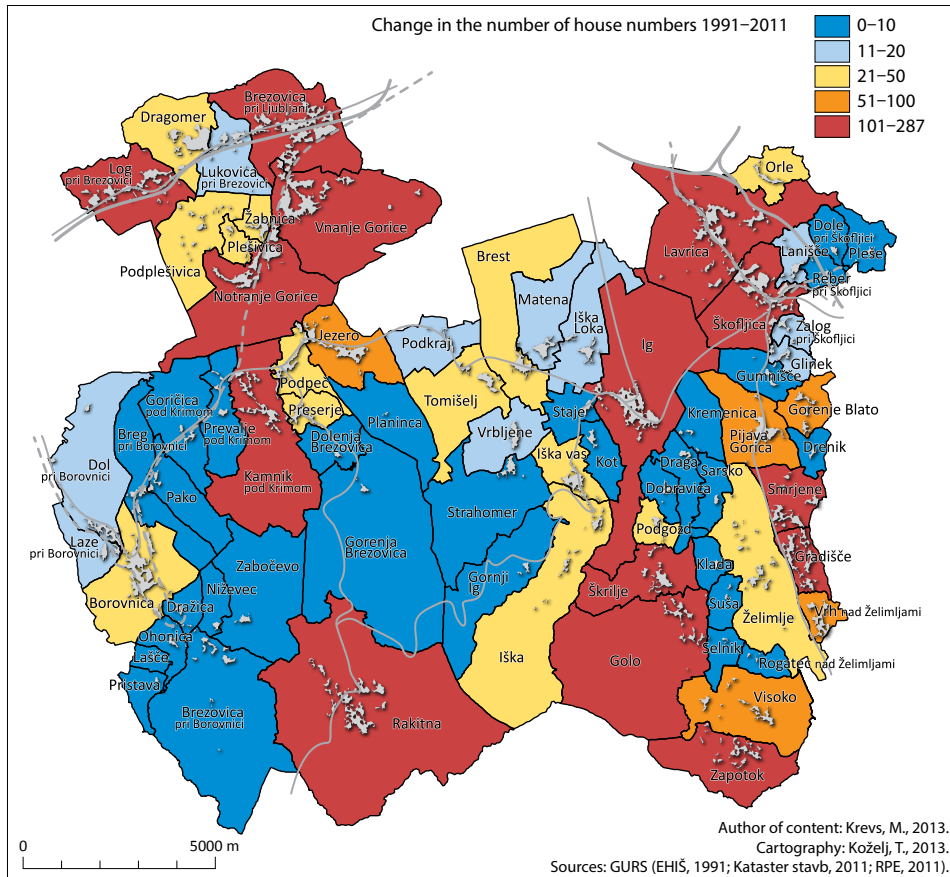
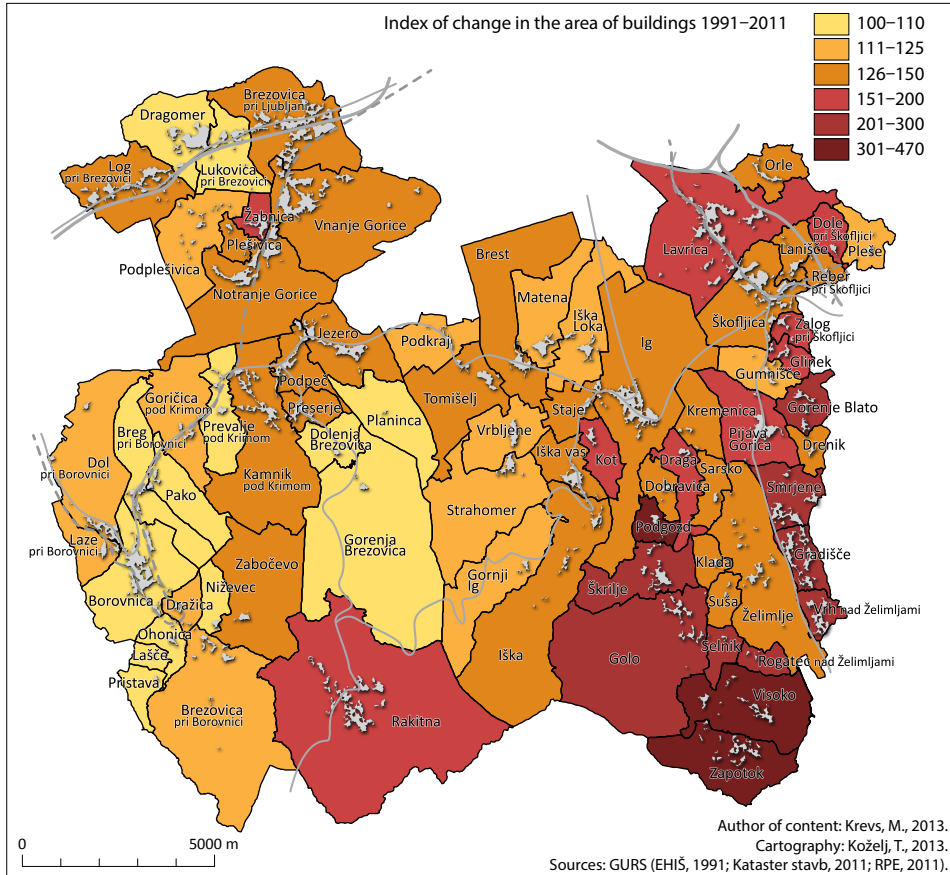


Figure 9: Estimate of the extent of the expansion of built-up areas: estimate of the index of change in the area of buildings between 1991 and 2011

Slika 9: Ocena obsega širjenja pozidanih površin: ocena indeksa spremembe površine stavb med letoma 1991 in 2011



Nearby suburbs in the southern part of the Ljubljana urban region studied comprise two areas: on the western side, the settlements of Brezovica, Dragomer, Lukovica pri Brezovici, Log pri Brezovici, Vnanje Gorice, Podplešivica, Plešivica, Žabnica, and Notranje Gorice, and on the eastern side, the settlements of Lavrica, Škofljica, Lanišče, and Zalog pri Škofljici. The settlements in the nearby suburbs are spatially contiguous with the city. The housing construction is typically relatively dense and consists mainly of one- and two-family dwellings.

Besides having a residential function, the settlements are also hosting certain service and production activities. These are located mainly along the main roads (Tržaška and Dolenjska roads), and in Škofljica also in business and industrial zone. Housing

areas are bounded by forest and agricultural land and the Ljubljansko barje (Ljubljana Marsh) landscape park. A comparison of satellite images for the years 2003 and 2011 shows that the spatial expansion of settlements during this period was limited to filling in empty spaces inside or at the edge of existing settlements in the form of internal development of settlements. The process of development and expansion of settlements is thus to some extent in accordance with strategic national guidelines. In this way a contiguous area of settlement with relatively high population density has taken shape among the settlements of Brezovica, Notranje Gorice, and Vnanje Gorice in the western part, and among the settlements of Lavrica, Škofljica and Lanišče in the eastern part of the nearby suburbs. Due to expansion, settlements have been spatially joined together into a unified suburbanised area. If individual do-it-yourself construction of houses was typical of the period up until 1995, after that year new forms of housing construction appeared. Especially characteristic was housing construction for the market in the form of relatively small, closed groups of one-family dwellings with common architectural and urban planning designs. Smaller groups of houses (10 to 20 housing units) predominated, usually row houses. Common parking areas, street lighting, and green spaces were also provided. Such smaller groups of housing units represent a new element in suburbanised settlements. They bring a more urban character into settlements, including greater density of settlement. In this respect, this kind of development of suburbanised settlements represents a positive shift towards the internal development of settlements and the improvement of areas with dispersed settlement.

Figure 10: A group of row houses in Vnanje Gorice (photo: D. Rebernik)

Slika 10: Skupina vrstnih hiš v naselju Vnanje Gorice (foto: D. Rebernik)



In all the settlements in the nearby suburbanised areas, stand-alone one-family houses strongly predominated. The exception was the settlement of Lavrica, in which two smaller neighbourhoods of multi-family dwellings were built in the past decade. Due to their small size and lack of services they cannot be termed true residential neighbourhoods, but rather a group of housing blocks with a uniform urban and architectural plan. In this case also it is an entirely new element in suburbanised settlements. Multi-family housing construction, which is otherwise typical of urban settlements, has thus begun to appear in some suburbanised settlements. Where these neighbourhoods are appropriately planned and integrated into the existing settlement, they represent a qualitative leap in the spatial development of suburban settlements. A larger population and greater density of settlement make possible the development of public transport and more rapid development of services. In both cases, in the western as well as eastern part, there has been an extension of city bus routes (routes 6b and 3g). In this way, settlements in the nearby suburbanised areas become a part of the greater metropolitan space.

Figure 11: The 'Ob potoku' settlement of multi-family dwellings in Lavrica (photo: D. Rebernik)
Slika 11: Naselje večstanovanjskih hiš 'Ob potoku' v Lavrici (foto: D. Rebernik)



Suburbanised settlements in the southern part of the Ljubljana urban region experience a very similar development, though it is on average somewhat less intensive than for the other settlements. The main reason is the fact that the majority of these settlements are located in the Ljubljana Marsh. Because of the threat of flooding, the landscape park management regime, the low carrying capacity of the land, and less favourable microclimatic conditions with many days of fog, interest in housing construction has been lower there than in neighbouring areas despite the proximity of Ljubljana and good transportation connections.

Rural settlements in the area studied, have experienced intensive population and spatial development in the last 20 years. This is true especially of the period from 2002 to 2011, when some rural settlements experienced the greatest relative population growth of all settlements in the area studied. Thus the fastest population growth was characteristic of settlements in the Krim Hills in the municipalities of Škofljica, Ig, and Brezovica. As for the whole of the Dinaric chain, this landscape is sparsely settled. The rugged karst environment with its numerous sinkholes and gorges was not attractive for settlers. Natural conditions for agriculture and settlement were poor, and so settlements are usually small. The spatial arrangement of settlements is also of interest. The central part is most sparsely settled. With the exception of Rakitna, the largest settlements are along the lower northern edge in an altitude zone of 350 to 600 m and enjoy good road connections with Ljubljana. At the beginning of 20th century the population in this area began to shrink and decreased from 5,730 to 4,691 between the censuses of 1869 and 1991. Only between the years 1981 and 1991 did the population grow by 4%, mainly in the places at the extreme northern edge of the region in the hinterland of Ljubljana (Perko, 1998, pp. 397–398).

After 1991 the settlements in this area experienced very intense population and spatial development. Even before 1991 several groups of second homes took shape here. The proximity of Ljubljana (about 30 to 45 minutes drive to the city centre), good road connections, a nicely preserved natural environment with a preponderance of forest and meadows, clean air, and favourable climatic conditions with a smaller number of foggy days than in the Ljubljana Basin as well as the relatively low cost of land were factors contributing to the creation of colonies of second homes. This is confirmed by public opinion survey (Hočevár et al., 2004) in which the majority of respondents shows the preference to live in rural settlements with low population densities, clean and healthy environment and good accessibility to nature. The settlement of second homes Rakitna stands out in particular due to its size; smaller such settlements are Gradišče nad Pijavo Gorico, Golo, Zapotok, and Visoko. There was a manyfold increase in population in the settlements of Smrjene, Gradišče nad Pijavo Gorico, Vrh nad Želimljami, Golo, Visoko, Škrilje, Zapotok, Visoko, Podgozd, and Rakitna. In Gradišče nad Pijavo Gorico, the population increased from 14 in 1991 to 740 in 2011, and in Smrjene from 167 to 720. The individual construction of one-family houses predominated in the settlements mentioned. The development of settlements was chaotic, with sprawling construction of houses at the edge of, or outside settlements being quite common. The settlements are surrounded by forest and agricultural land, and set far apart from one another. Housing construction was left entirely to the tastes of investors, hence the appearance of the settlements is highly disparate. Areas of newer construction developed around the older part, and part of the new construction, most often in the form of smaller groups of one-family houses, is located outside existing settlements. In settlements of second homes there has been an interesting process of partial transformation of these settlements into ones of permanent residence. It is often the case that representatives of the older generation have moved permanently into what used to be a second home, leaving their flat in the city to their adult children. After 2000, new forms of more organised construction also appeared in these

settlements. Individual investors built smaller groups of row houses, and in some places even smaller blocks of flats (especially the settlements Smrjene and Gradišče nad Pijavo Gorico) to sell on the market. The age and education structure of the population in these settlements is also quite interesting. Due to the influx of younger and better educated people from Ljubljana, the population of these settlements is relatively young and well educated, in contrast to other rural areas in Slovenia. The index of ageing in all settlements is lower than 100, and the share of the population with higher education exceeds 21% (Figures 13 and 14). In this way there has been a very interesting spatial and socio-economic transformation in these settlements. The settlements have acquired an entirely new function as the residential environment of a population employed in Ljubljana and living a more or less urban way of life. This is reflected in the external appearance of settlements and an architecture of new construction that is entirely 'urban'. New construction with modern architecture predominates, and the size of houses indicates the high socio-economic position of new residents.

Figure 12: Smrjene – development of the settlement between 2002 and 2012

Slika 12: Smrjene – razvoj naselja med letoma 2002 in 2012

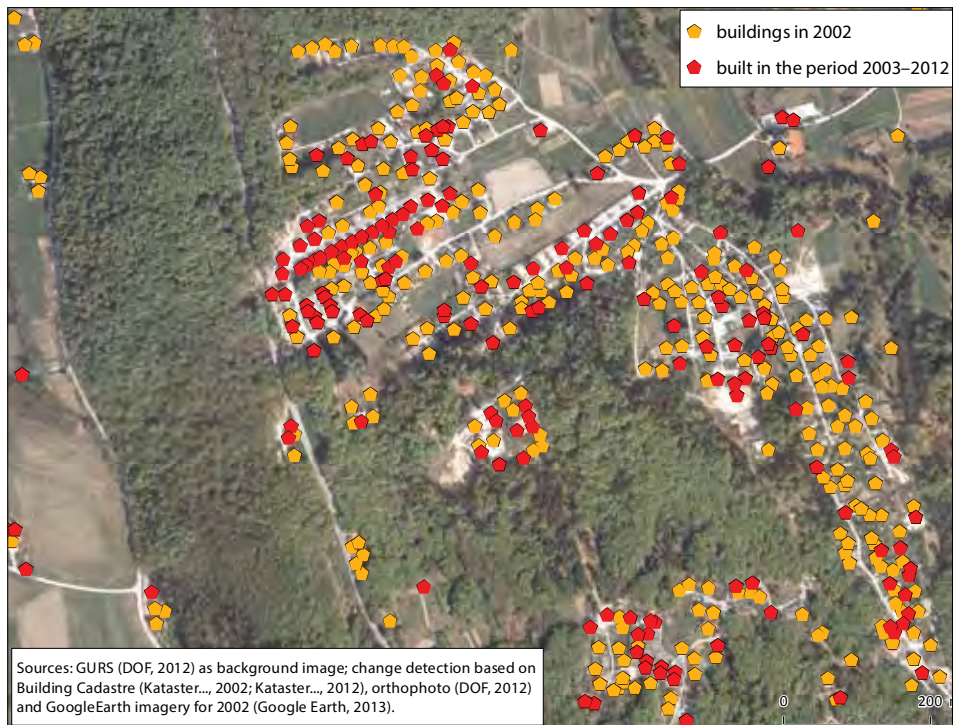


Figure 13: Index of ageing in 2011 by settlements
 Slika 13: Indeks staranja v letu 2011 po naseljih

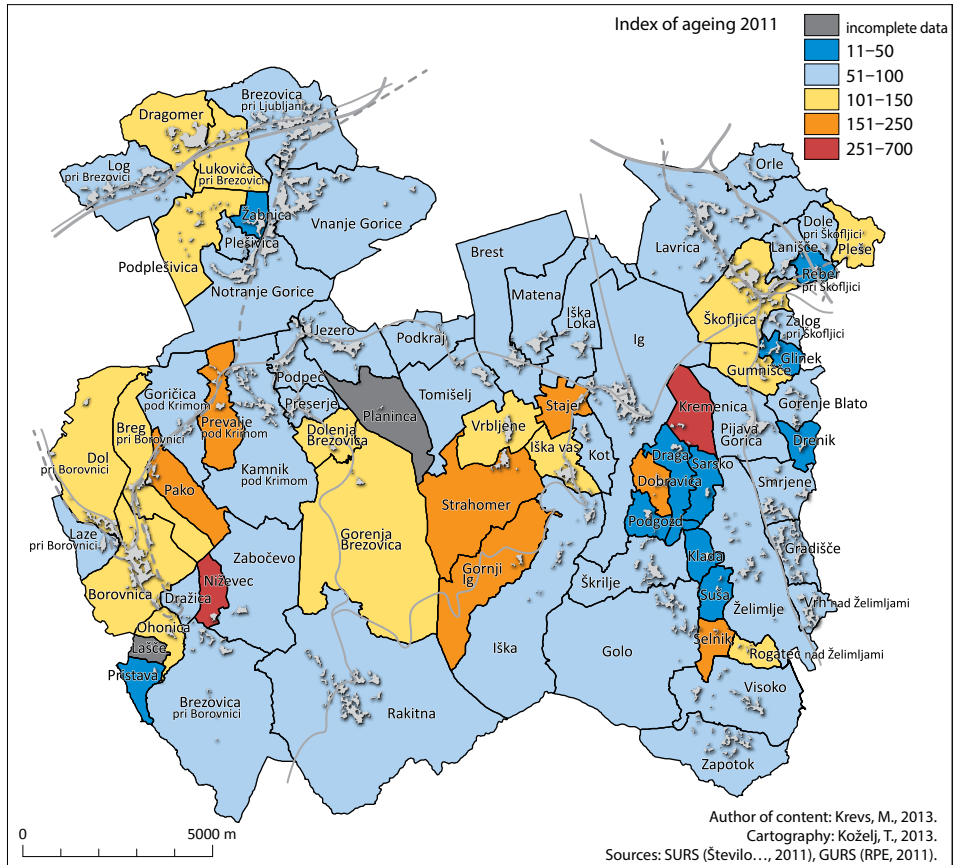


Figure 14: Share of the population with higher education in 2011 by settlements
 Slika 14: Delež prebivalcev z visoko izobrazbo v letu 2011 po naseljih

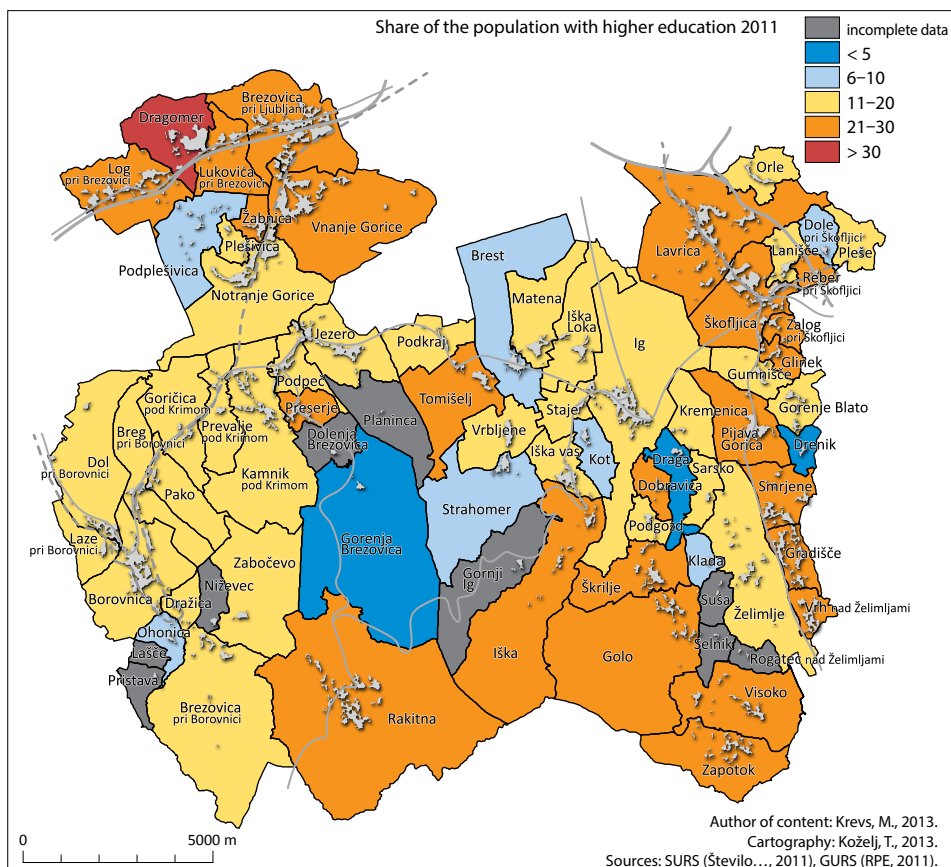


Figure 15: An example of dispersed settlement in the form of smaller groups of one-family houses outside nucleated settlements (Golo) (photo: D. Rebernik)

Slika 15: Primer razpršene poselitve v obliki manjših skupin enodružinskih hiš izven strnjenga naselja (Golo) (foto: D. Rebernik)



Figure 16: Multi-family houses in the settlement of Gradišče nad Pijavo Gorico (photo: D. Rebernik)

Slika 16: Večstanovanjske hiše v naselju Gradišče nad Pijavo Gorico (foto: D. Rebernik)



7. CONCLUSION

The Ljubljana urban region remains the Slovenian region with the fastest growing population, which is primarily a result of a positive migration balance, and in more recent years also as a result of positive natural increase. Also within the region there has been a relatively intense migration of the population between cities, suburbanised settlements, and rural areas. Over the past thirty years, the main process has been the migration of the population from cities to suburbs. In this way the largest area of suburbanisation in Slovenia has taken shape in the greater vicinity of Ljubljana.

Based on the results of this research on population development in the southern part of the Ljubljana urban region, we can confirm that there were important changes in migration trends after 1990, and these were especially pronounced after 2000. The fastest relative population growth was thus experienced by some rural settlements, especially those in the hilly southern part of the area studied. Settlements such as Smrjene, Gradišče, Golo, and Škriļje in the Krim Hills thus experienced a manyfold increase in population in the past ten years. Classical suburbanisation with population growth in the nearby suburbs has over the past decade given way to periurbanisation, for which intensive population growth in rural settlements is typical. The in-migration of the population in the settlements mentioned is the result first of all of the relatively good accessibility to Ljubljana, the lower costs of building land than in the city and suburban settlements, and a better quality residential environment.

The spatial development of rural settlements which are experiencing intensive population growth follows the model of sprawling construction in the form of smaller groups of one-family dwellings at the edge of existing settlements or entirely outside the areas of compact settlement. In certain settlements, for example Smrjene, larger areas of new construction have arisen. This kind of spatial development of settlements exacerbates the negative impacts associated with sprawl: longer commutes, less use of public transport, irrational land use, high costs of building and maintaining municipal and transportation infrastructure, and similar. Here we should also note the great gap between the strategic guidelines for spatial development at the national and the local (municipal) levels. On the other hand, there has been an internal development of settlements and increased density of settlement in the nearby suburbs. In addition to individual residential construction in the form of one-family dwellings, there has also been organized residential construction in the form of smaller multi-family dwellings or row houses in the last ten years. In this way suburbanised settlements have become integral parts of wider urban areas.

(Translated by Jean McCollister)

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PROSTORSKI IN PREBIVALSTVENI RAZVOJ NASELIJ V JUŽNEM DELU LJUBLJANSKE URBANE REGIJE

Povzetek

Ljubljanska urbana regija (LUR) doživlja med vsemi slovenskimi regijami najhitrejšo rast prebivalstva. Od leta 1995 do leta 2011 se je število prebivalcev v regiji tako povečalo od 485.000 na 535.000, oziroma za približno 10 %. Naraščanje prebivalstva je bilo v prvi vrsti posledica pozitivnega selitvenega salda, saj regija že od leta 1991 izkazuje višek priselitev nad odselitvami (Rebernik, 2004).

Tudi znotraj Ljubljanske urbane regije potekajo selitve prebivalstva med posameznimi območji. Glavno selitveno gibanje ostaja razseljevanje prebivalstva iz Ljubljane in ostalih mestnih naselij v suburbanizirano obmestje in v podeželska naselja v regiji. Tudi po letu 2002 se nadaljuje hitra rast prebivalstva v širšem podeželskem zaledju LUR. Klasična suburbanizacija z rastjo prebivalstva v ožjem obmestju se je v zadnjem desetletju torej prevesila v periurbanizacijo, za katero je značilna intenzivna rast prebivalstva v podeželskih naseljih. Med letoma 2002 in 2011 je bila najhitrejša rast prebivalstva značilna za južno obmestje, oziroma za občine Brezovica, Ig, Škofljica in Grosuplje.

Glavni namen prispevka je analiza razvoja prebivalstva in sočasnega prostorskega razvoja ter preobrazbe naselij na primeru južnega dela Ljubljanske urbane regije. Južni del te regije smo opredelili kot območje občin Borovnica, Brezovica, Log-Dragomer, Ig in Škofljica. Naštete občine vključujejo dele ožjega suburbaniziranega obmestja, širše obmestje in podeželska naselja. V raziskavi smo želeli ugotoviti, ali se razvoj prebivalstva in prostorski razvoj naselij razlikujeta po tako opredeljenih območjih. Poleg tega nas je zanimalo, ali je v primerjavi z obdobjem pred letom 2002 prišlo do pomembnejših sprememb v gibanju in trendih razvoja prebivalstva.

V Sloveniji spremlja suburbanizacijo tudi intenzivna morfološka, funkcijska in socioekonomska preobrazba naselij. V raziskavi smo poskušali ugotoviti osnovne značilnosti prostorskega razvoja in morfološke preobrazbe naselij ter socialne sestave prebivalstva.

Med vsemi občinami v LUR je med letoma 2002 in 2011 prebivalstvo upadlo le v občinah Litija in Vrhnika, najhitrejšo rast pa so zabeležile občine Logatec, Brezovica, Ig, Škofljica, Grosuplje, Trzin, Vodice in Komenda. Med letoma 2005 in 2012 je tudi

Mestna občina Ljubljana po daljšem obdobju upadanja števila prebivalstva zabeležila ponovno rast. Število prebivalcev v MOL se je tako od 267.000 (2005) povečalo na 280.000 (2012), oziroma za okoli 5 %.

Največje sklenjeno območje hitrega naraščanja števila prebivalstva med letoma 1991 in 2011 se je oblikovalo v južnem delu LUR, med občino Brezovica na zahodu in občino Grosuplje na vzhodu. Gre za tipične obmestne občine, ki vključujejo južno suburbanizirano obmestje Ljubljane, deloma pa tudi podeželska naselja na območju Ljubljanskega barja z okoliškimi hribovji (Polhograjsko, Krimsko, Posavsko hribovje). Pregled razvoja prebivalstva med leti 1991, 2002 in 2011 pokaže, da je bilo naraščanje prebivalstva po posameznih naseljih zelo neenakomerno. Največji relativni prirast prebivalstva (indeks nad 180) je značilen za podeželska naselja, še zlasti za naselja Iška, Golo, Škrilje, Podgozd, Dobravica, Draga, Visoko in Zapotok v občini Ig ter naselja Smrjene, Gradišče in Vrh nad Želimljami v občini Škofljica. Nadpovprečno velik relativni prirast prebivalstva (indeks med 140 in 180) je značilen še za nekatera naselja v ožjem suburbaniziranem obmestju, še zlasti za Brezovico in Log pri Brezovici v občini Brezovica in Lavrico v občini Škofljica ter nekatera naselja v širšem urbaniziranem obmestju, npr. Kamnik pod Krimom v občini Brezovica ter Pijavo Gorico, Glinek, Gumnišče in Gorenje Blato v občini Škofljica. Največji absolutni prirast prebivalstva je po drugi strani značilen za večja naselja v ožjem suburbaniziranem obmestju, še zlasti za Brezovico, Log pri Brezovici in Lavrico ter za nekatera podeželska naselja (Smrjene, Gradišče, Rakitna). Ožje suburbanizirano obmestje v preučevanem južnem delu LUR obsega dve območji: na zahodni strani naselja Brezovica, Dragomer, Lukovica pri Brezovici, Log pri Brezovici in Vnanje Gorice ter na vzhodni strani naselji Lavrica in Škofljica.

Primerjava satelitskih posnetkov za leti 2003 in 2011 pokaže, da je bila prostorska širitev naselij v tem obdobju omejena na zapolnjevanje prostih površin znotraj oziroma na robu obstoječih naselij. Razvoj poselitve in širitev naselij sta tako do neke mere skladna s strateškimi usmeritvami. Na ta način se je oblikovalo sklenjeno območje poselitve med naselji Brezovica, Notranje Gorice in Vnanje Gorice v zahodnem delu ter med Lavrico, Škofljico in Laniščem v vzhodnem delu ožjega suburbaniziranega obmestja. Naselja v širšem suburbaniziranem obmestju v južnem delu LUR so doživela zelo podoben, a v povprečju nekoliko manj intenziven razvoj. Poglavitni razlog je dejstvo, da se večina teh naselij nahaja na Ljubljanskem barju.

Podeželska naselja v preučevanem območju so torej v zadnjih 20 letih doživela intenziven prebivalstveni in prostorski razvoj. To še posebno velja za obdobje med letoma 2002 in 2011, ko so največjo relativno rast prebivalstva med vsemi naselji doživela nekatera podeželska naselja. Najhitrejša prebivalstvena rast je tako značilna za naselja v Krimskem hribovju v občinah Škofljica, Ig in Brezovica.

Takšen prostorski razvoj naselij ima številne negativne posledice, ki se povezujejo s pojavom razpršene poselitve: daljša dnevna mobilnost, upadanje uporabe javnega prometa, neracionalna raba zemljišč, visoki stroški izgradnje in vzdrževanja infrastrukture in podobno. Po drugi strani pa prihaja do notranjega razvoja naselij in zgoščevanja poselitve v suburbaniziranih obmestnih naseljih.