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CONTEMPORARY DEMOGRAPHIC CHANGES IN THE TOWN OF SINJ, CROATIA

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This paper analyzes the major demographic changes in the Town of Sinj in the second half of the 20th century. In comparison to many other parts of Croatia, particularly in Dalmatinska zagora, the Town of Sinj, in total, was not seriously affected by depopulation in the second half of the 20th century. The aim of this paper is to determine dominant demographic trends in all 14 settlements within the Town of Sinj by using several demographic indicators, and indicate which settlements are threatened by extinction and which have good prospects for further development.

Key words: Town of Sinj, depopulation, natural population change, net migration, age and sex composition, population aging

U ovom radu analiziraju se najznačajnije demografske promjene u Gradu Sinju u drugoj polovini 20. st. U usporedbi s brojnim drugim dijelovima Hrvatske, pogotovo dijelovima Dalmatinske zagore, Grad Sinj u tom razdoblju nije bio tako izrazito zahvaćen depopulacijom. Cilj je ovoga rada utvrditi dominantna demografska kretanja u svih 14 naselja uključenih u Grad Sinj, uz korištenje odabranih demografskih pokazatelja, te ukazati kojim naseljima prijeti izumiranje, a koja imaju dobre preduvjete za daljnji razvoj.

Ključne riječi: Grad Sinj, depopulacija, prirodno kretanje, migracijska bilanca, dobno-spolna struktura, starenje stanovništva

Introduction

In the period after the Second World War Croatia has been faced with negative demographic trends, particularly in rural areas. Depopulation of most of the settlements has been the result of extreme rural exodus, constant natural population decrease, urban-rural polarization and intensive population aging (POKOS, 2002). An area that is often given as the example of a depopulative area in Croatia is Dalmatinska zagora.

From the first official population census in 1857 until the beginning of the 20th century Dalmatinska Zagora was characterized by high rates of population increase. In the next three decades the increase continued, but with lower increase rates in comparison with those from the previous period. However, since 1930s this area has recorded continuous population decrease, which had been relatively low until the Second World War, but after the war, and particularly in the last four decades, this decrease has become so intense that it has caused severe depopulation or even extinction of some settlements (MATAS, 1995). Such demographic development is directly connected with the process of littoralization, which initiated in 1960s and has caused migrations of the poor population from the hinterland to the coastal area, in search for jobs and better living conditions.

However, not all parts of Dalmatinska zagora have been affected by severe depopulation, and among those who have there are differences in intensity and causes of depopulation. Therefore, it seems necessary to make separate analyses of certain parts of Zagora in order to distinguish which parts are more intensively affected by depopulation, which are on the verge of dying out and finally, which have good perspectives for future development. This paper will deal with one particular part of Dalmatinska zagora situated in Split hinterland and that is the Town of Sinj. It consists of 14 settlements, encompasses the area of 181 sq. km and according to the last population census from 2001 it had 25,373 inhabitants.

Notes on methodology

Before analyzing further the population development of the Town of Sinj, it is necessary to give some notes on methodology without which some of the research results might be misinterpreted. One of the most important notes refers to the differences in census methodologies, particularly in defining total number of inhabitants. Namely, in 1971, 1981 and 1991 population censuses total population was determined by *de iure* principle (i.e. it also included the Croatian citizens who had been living abroad). On the other hand, 2001 census was conducted by *de facto* principle (i.e. it included those Croatian citizens who had been living abroad up to a year). Additionally, there are certain distinctions in methodologies of recording vital events, i.e. births and deaths. Namely, up to 1998 vital events in Croatia also included the Croatian citizens living abroad. However, since 1998 vital events refer only to the Croatian citizens living in Croatia.

In 1991 there were some administrative and territorial changes regarding the settlements Brnaze and Sinj. Namely, a part of Brnaze settlement was annexed to Sinj settlement; therefore it is not possible to distinguish the natural population change and net migration in these two settlements in 1981-1991 intercensal period.

Since Croatia does not have a special register that records migrations, we employed vital-statistical method in order to calculate net migration. This method is based on calculating intercensal population change between two consecutive population censuses and natural increase/decrease in that period. This method, unfortunately, cannot indicate immigration and emigration rates, but it can be used in specifying whether a certain area is immigrational or emigrational.

Intercensal population change

In comparison to many other parts of Croatia, particularly in Dalmatinska zagora, the Town of Sinj, in total, was not seriously affected by depopulation in the second half of the 20th century. Namely, in the period between 1948 and 2001 the population of this area increased by 63.4 per cent, i.e. by almost 1.2 per cent annually (Tab. 1). However, there are certain differences in population dynamics among the settlements themselves. Out of 14 settlements only five of them recorded population decrease in this period (Lučane -3.0 per cent, Obrovac Sinjski -10.0 per cent, Bajagić -25.6 per cent, Gljev -47.7 per cent and Zelovo -70.2 per cent). On the other hand, three settlements recorded a significant increase of over 50.0 per cent (Karakašica 51.6 per cent, Brnaze 88.3 per cent and Sinj 211.4 per cent).

Tab. 1 Population of the Town of Sinj from 1948 to 2001
Tab. 1. Kretanje broja stanovnika Grada Sinja 1948.-2001. godine

Settlement	**1948**	**1953**	**1961**	**1971**	**1981**	**1991**	**2001**
Bajagić	936	973	1,007	906	868	844	696
Brnaze	1,712	1,846	2,108	2,536	3,126	3,097	3,223
Čitluk	500	516	581	611	616	514	552
Glavice	2,741	2,914	3,093	3,376	3,775	4,055	3,876
Gljev	694	683	713	669	637	562	363
Jasensko	294	319	353	360	326	422	365
Karakašica	465	527	583	603	584	686	705
Lučane	708	760	804	769	768	720	687
Obrovac Sinjski	1,015	1,060	1,041	978	987	991	913
Radošić	543	628	694	632	612	605	602
Sinj	3,683	4,444	5,487	6,931	9,177	11,378	11,468
Suhač	484	504	559	584	658	586	573
Turjaci	1,143	1,251	1,281	1,319	1,403	1,259	1,169
Zelovo	608	439	383	324	312	266	181
Total	**15,526**	**16,864**	**18,687**	**20,598**	**23,849**	**25,985**	**25,373**

Source: Naselja i stanovništvo Republike Hrvatske 1857.-2001., CD ROM, Državni zavod za statistiku.

In order to get a better insight into the population dynamics of the settlements included into the Town of Sinj, and of this area in general, it is necessary to make a thorough analysis by taking into consideration all intercensal periods. In both 1948/1953 and 1953/1961 intercensal periods only two settlements had population decrease (Tab. 2). Up to late 1970s this was mostly agricultural area and most of the labor force was engaged in activities of the primary sector of economy. Namely, in the first couple of decades following the Second World War many parts of Croatia were destroyed, the process of industrialization was still in its early stages of development, land was considered to be a valuable resource, rural-urban migrations were not so pronounced, so

the rural areas were not severely affected by depopulation. Additionally, the birth rates in the post-war period were high, resulting in population increase in many areas.

Tab. 2 Population change indices of the Town of Sinj from 1948 to 2001
Tab. 2. Indeksi promjene broja stanovnika u Gradu Sinju 1948.-2001. godine

Settlement	**1948/1953**	**1953/1961**	**1961/1971**	**1971/1981**	**1981/1991**	**1948/2001**
Bajagić	104.0	103.5	90.0	95.8	97.2	74.4
Brnaze	107.8	114.2	120.3	123.3	99.1	188.3
Čitluk	103.2	112.6	105.2	100.8	83.4	110.4
Glavice	106.3	106.1	109.1	111.8	107.4	141.4
Gljev	98.4	104.4	93.8	95.2	88.2	52.3
Jasensko	108.5	110.7	102.0	90.6	129.4	124.1
Karakašica	113.3	110.6	103.4	96.8	117.5	151.6
Lučane	107.3	105.8	95.6	99.9	93.8	97.0
Obrovac Sinjski	104.4	98.2	93.9	100.9	100.4	90.0
Radošić	115.7	110.5	91.1	96.8	98.9	110.9
Sinj	120.7	123.5	126.3	132.4	124.0	311.4
Suhač	104.1	110.9	104.5	112.7	89.1	118.4
Turjaci	109.4	102.4	103.0	106.4	89.7	102.3
Zelovo	72.2	87.2	84.6	96.3	85.3	29.8
Total	**108.6**	**110.8**	**110.2**	**115.8**	**109.0**	**163.4**

Source: Same as Tab. 1

In the following three intercensal periods (1961/1971, 1971/1981 and 1981/1991) the number of depopulative settlements was increasing constantly – six, seven and nine, respectively. After 1960s Croatia experienced stronger industrialization, which caused big migrations from rural and less developed areas to towns. At the same time, many started immigrating to other European countries in search for work. Despite the fact that several settlements within the Town of Sinj were losing population at that time, this area recorded general population increase (Fig. 1), but mostly due to population increase in one settlement – Sinj. This increase in Sinj was not caused only by natural population increase, but also by immigration of people from the surrounding settlements, which accordingly, lost a part of their population.

The most significant increase was recorded between 1971 and 1981 when Sinj had 32.4 per cent increase, and the whole area almost 15.8 per cent increase. The reasons for such increase in a ten-year period are mainly related to the general circumstances present at that time. Namely, that was the time of the notable rural exodus in Croatia, strong urban immigration and the development of industry and service sector. At that time, Sinj Municipality comprised 75 settlements and Sinj was the only urban settlement among them, which also had a developed industry. All these facts acted as powerful pull factors for the population of the surrounding area.

The socio-economic transformation in the period from 1953 to 2001 is well presented by the transition of the employed population from the activities of the primary sector (primarily agriculture) to the activities of secondary and then tertiary sector. In

1953 as much as 62.2 per cent of the workers were employed in primary sector and in 2001 only 5.7 per cent. On the other hand, in 1991 almost 50 per cent of workers were employed in secondary sector. According to the last population census secondary, tertiary and quaternary sectors were almost equal in terms of number of people employed in them.

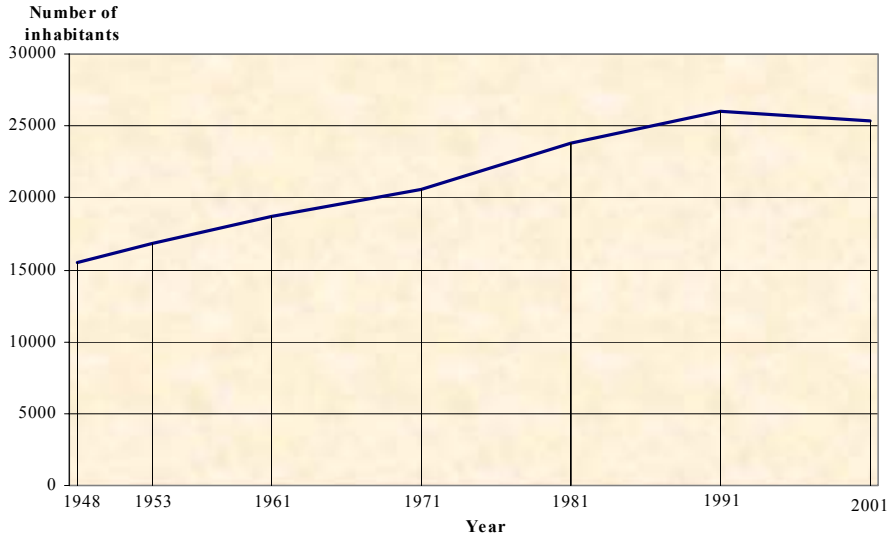

Fig. 1 Number of inhabitants in the Town of Sinj from 1948 to 2001
Sl. 1. Kretanje broja stanovnika Grada Sinja 1948.-2001. godine

In the last intercensal period the Town of Sinj recorded further population increase, but it should be pointed out that the 1991 and 2001 population census data are not absolutely comparable due to changed census methodology. Nevertheless, the increase was recorded and it was the result of a long-term natural population increase.

Natural population change

In examining demographic development of an area it is inevitable to analyze its natural population change as one of the basic determinants of general population trend. Namely, natural population change and migrations are basic determinants of future demographic development and structural changes of a population. Many parts of Croatia, including most parts of Dalmatinska zagora, have been affected by a long-term natural population decrease, which, coupled with negative net migration, has caused depopulation. However, the area of the Town of Sinj had natural population increase in the second half of the 20th century, which had positive effects on demographic development of this area, despite the negative net migration.

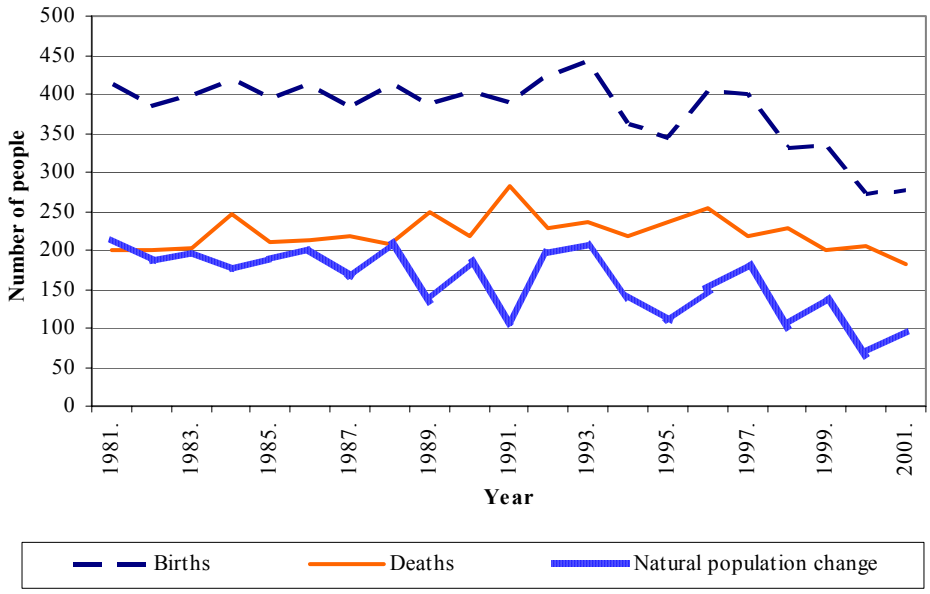

Fig. 2 Births, deaths and natural population change in the Town of Sinj from 1981 to 2001

Sl. 2. Prirodno kretanje stanovništva Grada Sinja 1981.-2001. godine

In the last two decades of the 20th century the Town of Sinj had a constant natural population increase, i.e. the surplus of births over deaths (Fig. 2). However, the comparison of the last two intercensal periods shows that natural population increase lowered by 24.7 per cent, and the number of births by 7.7 per cent. In 1981/1991 intercensal period only two settlements (Gljev and Zelovo) recorded natural population decrease, while in the next period there were five such settlements (Bajagić, Lučane, Obrovac Sinjski, Radošić and Zelovo) (Tab. 3). Almost all settlements recorded decrease in number of births and increase in number of deaths primarily due to changes in age composition. Namely, this area has been affected by emigration, and it is well known that most of the migrants are aged between 20 and 40. Additionally, that same age group makes the fertile cohort, so the reduction of that cohort directly influences the fertility and future reproduction.

Along with natural population change, one of the frequently used parameters that can indicate future population reproduction is vitality index ($V_i = \frac{N}{M} \times 100$). This index compares the number of live births to 100 deaths, and if the result is above 100, then the population reproduction has been ensured, but if it is below 100, then the reproduction rate is falling. So, the critical value for vitality index is 100 (stagnation) (WERTHEIMER-BALETIĆ, 1999). In 1981 only one settlement (Zelovo) had the vitality index below the critical value, while the others were either somewhat above 100, or well above it (Tab. 4).

Tab. 3 Natural population change in the Town of Sinj in 1981/1990 and 1991-2000 intercensal periods
Tab. 3. Prirodno kretanje stanovništva Grada Sinja po naseljima 1981./1991. i 1991./2001.

Settlement	1981-1991			1991-2001		
	Births	Deaths	Natural change	Births	Deaths	Natural change
Bajagić	96	75	21	90	99	-9
Brnaze*	-	-	-	430	223	207
Čitluk	76	65	11	89	59	30
Glavice	540	338	202	450	359	91
Gljev	34	63	-29	63	60	3
Jasensko	65	42	23	41	31	10
Karakašica	109	55	54	124	59	65
Lučane	92	84	8	75	79	-4
Obrovac Sinjski	149	111	38	107	125	-18
Radošić	92	64	28	90	95	-5
Sinj	2,478	1,046	1,432	1,868	872	996
Suhač	73	50	23	70	59	11
Turjaci	184	139	45	180	151	29
Zelovo	19	30	-11	22	38	-16
Total	**4,007**	**2,162**	**1,845**	**3,699**	**2,309**	**1,390**

Source: Tablogrami Rođeni i umrli po naseljima, Državni zavod za statistiku, Zagreb
* Due to administrative and territorial changes between the settlements Brnaze and Sinj in 1991 natural population change of these two settlements cannot be regarded separately in 1981-1991 intercensal period, so the data for Brnaze is included within the data for Sinj. See notes on methodology.

This indicator shows that in 1981 almost all settlements ensured reproduction, for example vitality index of 300.0 in Sinj indicates that this settlement had three times more births than deaths. On the other hand, two decades later ten settlements were above the critical value and four below. This clearly reflects the fact that the number of births declined significantly over the two decades.

Within the scope of natural population change and birth rates it is also important to take into consideration another reproduction indicator – fertility rate, which can be measured in several ways, but one of the most frequently used is general fertility rate (GFR). It is defined as the number of births that occur in a population during a year per 100 (or 1,000) women aged 15-49 ($GFR = \frac{N}{P_{f15-49}} \times 100$) (WEINSTEIN, PILLAI, 2001). The analysis of GFR in the last two decades also indicates that the births are declining significantly, e.g. in 1991 it was 6.1 and ten years later 4.5., which is a notable decrease, particularly if we bare in mind that the number of women in that period declined by 2.1 per cent, and the number of births by 28.5 per cent.

Tab. 4 Vitality index in the Town of Sinj, by settlements, from 1981 to 2001
Tab. 4. Vitalni indeks Grada Sinja po naseljima 1981.-2001. godine

Settlement	**1981**	**1991**	**2001**
Bajagić	111.1	16.7	66.7
Brnaze*	-	-	154.5
Čitluk	171.4	66.7	120.0
Glavice	158.3	176.7	137.9
Gljev	100.0	100.0	175.0
Jasensko	100.0	100.0	25.0
Karakašica	366.7	123.1	175.0
Lučane	240.0	150.0	120.0
Obrovac Sinjski	126.7	64.3	88.9
Radošić	180.0	36.4	266.7
Sinj	300.0	181.1	171.2
Suhač	100.0	55.6	200.0
Turjaci	108.3	108.3	214.3
Zelovo	33.3	25.0	33.3
Total	**206.5**	**138.4**	**151.9**

Source: Tablogrami Rođeni i umrli po naseljima, Državni zavod za statistiku, Zagreb
* Due to administrative and territorial changes between the settlements Brnaze and Sinj in 1991 natural population change of these two settlements cannot be regarded separately in 1981-1991 intercensal period, so the data for Brnaze is included within the data for Sinj. See notes on methodology.

Migrations and general population trend

The importance of analyzing migratory movements is reflected in the fact that migrations have twofold influence on population composition; besides a momentary loss of (mostly young) population, the emigration also "takes away" the future generations that would have been born if that population had stayed. In 1981/1991 intercensal period the population of this area increased by 1.2 per cent due to immigration, although only four settlements had positive net migration (Glavice, Jasensko, Karakašica and Sinj).

In the following intercensal period (1991/2001) the area of the Town of Sinj recorded significant negative net migration (Tab. 5). Namely, in this period it lost 7.7 per cent of the population due to emigration. Additionally, only two settlements had positive net migration. It is interesting to note that even the central settlement had population loss of 8.0 per cent. However, it should also be noted that a certain part of the calculated population loss is the result of different census methodologies.

Tab. 5 Net migration of the Town of Sinj in 1981/1991 and 1991/2001 intercensal periods
Tab. 5. Migracijska bilanca Grada Sinja po naseljima 1981./1991. i 1991./2001.

Settlement	Number of inhabitants in 1981	Natural population increase 1981-1991	Expected number of inhabitants in 1991	Number of inhabitants in 1991	Net migration 1981/1991
Bajagić	868	21	889	844	-45
Brnaze*	-	-	-	-	-
Čitluk	616	11	627	514	-113
Glavice	3,775	202	3,977	4,055	78
Gljev	637	-29	608	562	-46
Jasensko	326	23	349	422	73
Karakašica	584	54	638	686	48
Lučane	768	8	776	720	-56
Obrovac Sinjski	987	38	1,025	991	-34
Radošić	612	28	640	605	-35
Sinj	12,303	1,432	13,735	14,475	740
Suhač	658	23	681	586	-95
Turjaci	1,403	45	1,448	1,259	-189
Zelovo	312	-11	301	266	-35
Total	**23,849**	**1,845**	**25,694**	**25,985**	**291**

Settlement	Number of inhabitants in 1991	Natural population increase 1991-2001	Expected number of inhabitants in 2001	Number of inhabitants in 2001	Net migration 1991/2001
Bajagić	844	-9	835	696	-139
Brnaze	3,097	207	3,304	3,223	-81
Čitluk	514	30	544	552	8
Glavice	4,055	91	4,146	3,876	-270
Gljev	562	3	565	363	-202
Jasensko	422	10	432	365	-67
Karakašica	686	65	751	705	-46
Lučane	720	-4	716	687	-29
Obrovac Sinjski	991	-18	973	913	-60
Radošić	605	-5	600	602	2
Sinj	11,378	996	12,374	11,468	-906
Suhač	586	11	597	573	-24
Turjaci	1,259	29	1,288	1.169	-119
Zelovo	266	-16	250	181	-69
Total	**25,985**	**1,390**	**27,375**	**25,373**	**-2,002**

Sources: Naselja i stanovništvo Republike Hrvatske 1857.-2001., CD ROM, Državni zavod za statistiku. Tablogrami Rođeni i umrli po naseljima, Državni zavod za statistiku, Zagreb

* Due to administrative and territorial changes between the settlements Brnaze and Sinj in 1991 natural population change of these two settlements cannot be regarded separately in 1981-1991 intercensal period, so the data for Brnaze is included within the data for Sinj. See notes on methodology.

In order to get a better insight of the intensity of migrations, it is inevitable to make a more thorough analysis by comparing natural population change and intercensal population change. Applying this analysis we can distinguish eight types of general population trend, four immigrational and four emigrational. Immigrational or I types have positive net migration, while the emigrational or E types have negative net migration (FRIGANOVIĆ, 1990). In 1981/1991 intercensal period only four settlements had immigrational trend (Glavice, Jasensko, Karakašica and Sinj together with Brnaze) (Fig. 3). Most of the settlements had E_3 type of emigrational trend, but the settlements that had the worst indicators and were dying out were Zelovo and Gljev, due to their position at the outskirts of this territorial unit and their size (they were among the smallest settlements).

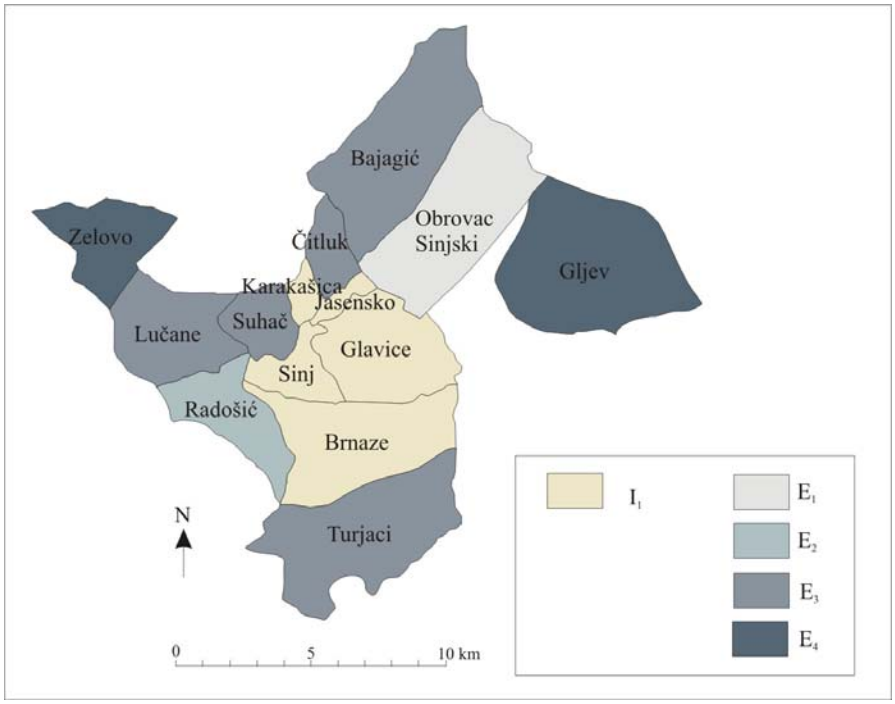

Fig. 3 Types of general population trend of the Town of Sinj in 1981-1991 intercensal period; $\mathbf{I_1}$ – expansion through immigration; $\mathbf{E_1}$ – emigration, $\mathbf{E_2}$ – depopulation, $\mathbf{E_3}$ – significant depopulation, $\mathbf{E_4}$ – dying out.
Sl. 3. Tipovi općeg kretanja stanovništva u Gradu Sinju 1981.-1991.; $\boldsymbol{I_1}$ *– ekspanzija imigracijom;* $\boldsymbol{E_1}$ *– emigracija,* $\boldsymbol{E_2}$ *– depopulacija,* $\boldsymbol{E_3}$ *– izrazita depopulacija,* $\boldsymbol{E_4}$ *– izumiranje.*

The settlements affected by strong emigration (and depopulation) were those that were mostly agriculture-oriented, i.e. most of the workers were employed in primary sector of economy. Prior to 1981 census, in almost all settlements, over 50 per cent of the workers were employed in primary sector, and in some settlements, like Bajagić, Gljev

and Zelovo, there were over 80 per cent of such workers. However, during 1970s and 1980s Dalmatia was affected by strong industrialization, particularly in larger urban centers, which was the cause of mass out-migration from rural areas, including Dalmatinska zagora and the islands, to urban centers on the coast. Nevertheless, Sinj, as the center of the whole Cetinjska Krajina, also started developing and attracting the population from the surrounding area. Consequently, Sinj became immigrational area, while the surrounding settlements were losing population. The analysis of the employment according to economic sectors in 1991 clearly shows that this whole area had been affected by deagrarization and that most of the workers were employed in secondary and tertiary sector.

On the other hand, the situation regarding general population trend in the following intercensal period was quite different. Only two settlements (Čitluk and Radošić) had immigrational population trend, but the population increase caused by immigration was negligible (Fig. 4). Of course, it has to be emphasized once again that a part of the population loss occurred due to different census methodologies in 1991 and 2001.

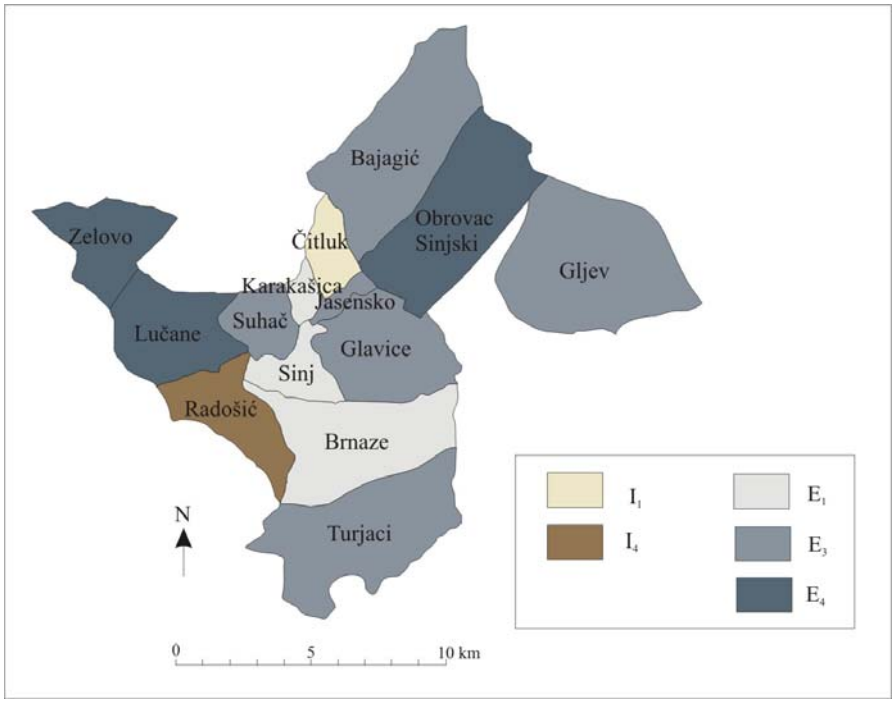

Fig. 4 Types of general population trend of the Town of Sinj in 1991-2001 intercensal period; **I_1** – expansion through immigration, **I_2** – regeneration through immigration, **I_3** – weak regeneration through immigration; **E_1** – emigration, **E_2** – depopulation, **E_3** – significant depopulation, **E_4** – dying out.

Sl. 4. Tipovi općeg kretanja stanovništva u Gradu Sinju 1991.-2001.; ***I_1*** *– ekspanzija imigracijom,* ***I_2*** *– regeneracija imigracijom,* ***I_3*** *– slaba regeneracija imigracijom;* ***E_1*** *– emigracija,* ***E_2*** *– depopulacija,* ***E_3*** *– izrazita depopulacija,* ***E_4*** *– izumiranje.*

It is also interesting to compare the roles of natural decrease and out-migration in depopulation of the settlements. Namely, in 1981-1991 intercensal period in six out of eight depopulative settlements the main cause of depopulation was negative net migration, and in the remaining two settlements depopulation was caused both by natural decrease and negative net migration. Additionally, negative net migration in these two settlements had stronger impact on depopulation than the natural decrease, so we can conclude that the main cause of depopulation in this period was negative net migration.

On the other hand, in 1991-2001 intercensal period there were ten depopulative settlements and in six of them depopulation was caused by negative net migration, while the other four were affected both by natural decrease and negative net migration. However, in these four settlements the intensity of negative net migration surpassed the natural decrease, so just like in the previous intercensal period, negative net migration was the main cause of depopulation.

Age and sex composition

Age composition is the most important structural feature in population analysis. It is the reflection of present and the predictor of future population and economic developments of a particular area, because it determines population contingents that are crucial for biological reproduction (birth and death rates) as well as for formation of labor force (WERTHEIMER-BALETIĆ, 1999). If we compare the age and sex composition of the population in 1971 and 2001, we can observe that this area experienced drastic changes in that segment of population structure. The comparison of population pyramids from the above-mentioned years clearly shows that change (Fig. 5).

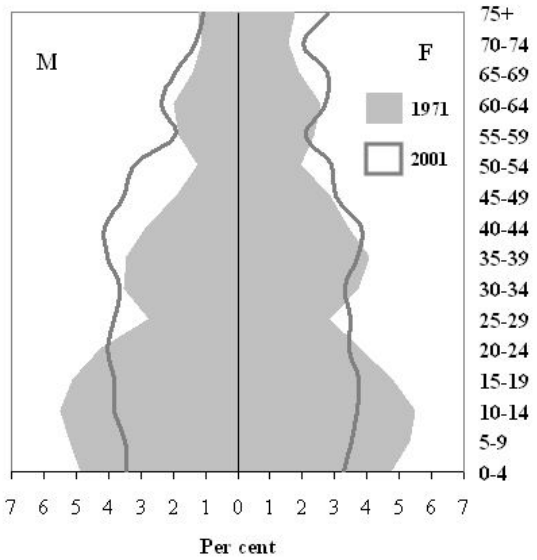

Fig. 5 Comparison of population pyramids of the Town of Sinj in 1971 and 2001
Sl. 5. Usporedba dobno-spolne strukture Grada Sinja 1971. i 2001. godine

The 1971 pyramid reflects the effects of the Second World War, so we can observe the effects of reduced birth rate during the war (lack of population aged 25-29) and the effects of increased death rate among the population aged 45-59. The most striking reduction of population was recorded in age groups from 0 to 24 years of age. On the other hand, the share of adult population, particularly male, increased significantly. Considering the population aged 65 and over, we can notice that their share also increased, particularly the share of women. In the period from 1971 to 2001 the share of young population decreased by 9.6 per cent, while at the same time the share of adult and old population increased by 6.5 and 3.2, respectively (Tab. 6). The causes of such age composition are reduced number of births in the last several decades and longer life expectancy.

Tab. 6 Age and sex composition of the population by age groups in 1971, 1991 and 2001
Tab. 6. Sastav stanovništva po dobi i spolu 1971., 1991. i 2001. po dobnim skupinama

Year	Sex	0-14	15-64	65+
1971.	Male	15.4	28.4	3.6
	Female	15.5	31.9	5.1
	Total	30.9	60.3	8.8
1991.	Male	12.3	34.4	3.0
	Female	11.6	33.1	5.6
	Total	23.9	67.5	8.6
2001.	Male	10.7	34.5	4.3
	Female	10.5	32.3	7.6
	Total	21.3	66.8	12.0

Source: Popis stanovništva i stanova 1971, Pol i starost – I deo: rezultati po naseljima i opštinama, knjiga VIII, SZS, Beograd, 1973.
Popis stanovništva, domaćinstava, stanova i poljoprivrednih gospodarstava, 31.ožujak 1991., Stanovništvo prema spolu i starosti po naseljima, dokumentacija 882, RZS, Zagreb, 1994.
Popis stanovništva, kućanstava i stanova 31. ožujka 2001., Državni zavod za statistiku, http://www.dzs.hr/Hrv/Popis%202001/popis20001.htm

One of the best indicators for evaluating the age composition of population is aging index, i.e. the comparison of the number of old and young population. Aging of the population begins when the aging index is over 40, and the share of the old population reaches 12 per cent (WERTHEIMER-BALETIĆ, 1999). According to 1971 census none of the settlements had aging index over 40, while in 1991 more than a half of the settlements had the aging index over 40 (Tab. 7). However, the overall aging index of the whole area was still below 40. On the other hand, in 2001 this indicator was above the critical level in all settlements and overall as well, due to increased number of older people and notable decrease of young population. The situation was particularly difficult in three settlements with the highest aging index (Zelovo, Gljev and Bajagić), because they had more old population than the young. It is justified to say that such unfavorable age composition will continue to deteriorate and lead to eventual extinction of some settlements, because the fertile cohort will decrease leading to low birth rates, and along with the aging of the population the natural decrease is inevitable.

Tab. 7 Aging index and mean age of the Town of Sinj by settlements in 1971, 1991 and 2001
Tab. 7. Indeks starenja i prosječna dob stanovništva Grada Sinja po naseljima 1971., 1991. i 2001. godine

Settlement	Aging index			Mean age		
	1971	1991	2001	1971	1991	2001
Bajagić	30,5	78,4	118,0	32	38	41
Brnaze	22,4	31,6	48,6	29	32	35
Čitluk	29,0	53,4	48,4	31	36	35
Glavice	32,6	36,1	63,4	31	34	36
Gljev	31,6	81,5	133,9	31	37	42
Jasensko	25,4	30,0	52,3	29	32	35
Karakašica	27,4	30,2	41,9	30	32	34
Lučane	30,9	52,8	77,9	32	35	37
Obrovac Sinjski	37,2	53,5	71,5	33	36	37
Radošić	38,8	62,5	59,7	33	37	36
Sinj	24,8	26,2	48,8	31	32	35
Suhać	21,7	36,6	51,2	30	34	35
Turjaci	31,6	51,7	65,0	32	35	36
Zelovo	25,0	82,0	139,3	31	38	41
Total	**28,3**	**35,8**	**56,3**	**31**	**33**	**36**

Aging index: $X_s \frac{P_{65+}}{P_{0-14}} \times 100$

Source: Popis stanovništva i stanova 1971, Pol i starost – I deo: rezultati po naseljima i opštinama, knjiga VIII, SZS, Beograd, 1973.
Popis stanovništva, domaćinstava, stanova i poljoprivrednih gospodarstava, 31.ožujak 1991., Stanovništvo prema spolu i starosti po naseljima, dokumentacija 882, RZS, Zagreb, 1994.
Popis stanovništva, kućanstava i stanova 31. ožujka 2001., Državni zavod za statistiku, http://www.dzs.hr/Hrv/Popis%202001/popis20001.htm

Another important indicator for analyzing the age composition is the mean age of the population. The analysis shows that the aging process has progressed, particularly if we take into consideration the fact that the mean age of the population has been above the critical level for several decades (the critical value is 30 years; WERTHEIMER-BALETIĆ, 1999). In 1971, the mean age was below 30 only in two settlements, while in 2001 all the settlements had the mean age above 30, the lowest being Karakašica with 34 (Tab. 7). The worst situation is again in Zelovo, Gljev and Bajagić where the mean age of population is above 40.

Demographically challenged settlements

The above-mentioned analyses of general population change, natural change and age-sex composition indicate that some parts of the Town of Sinj have been affected by depopulation, so it seems necessary to make a forecast of future demographic trends in this area and indicate the settlements that are likely to die out. Although the parameters used in this analysis are purely demographical and lack more thorough field research, it is our opinion that even as such, this analysis can contribute to forming a better insight of the current and future demographic situation in this area, and serve as a basis for making revitalization plans of demographically challenged areas in Croatia. The analysis included seven parameters related to age structure, natural change rates and population growth rates in selected years and intercensal periods (Tab. 7). The three settlements with the worst indicators are Zelovo, Gljev and Bajagić. In these settlements the elderly population outnumbers the young population, the mean age is above 40, they record natural decrease or just a slight increase, and finally, they have a constant intercensal population decrease.

Tab. 8 Comparative analysis of settlements within the Town of Sinj, according to selected indicators.
A – proportion of young people (under 15) (2001); **B** – proportion of old people (over 65) (2001); **C** – mean age (2001); **D** – annual natural increase rate 1981-1991 (in ‰); **E** – annual natural increase rate 1991-2001 (in ‰); **F** – population growth rate 1981-1991 (in %); **G** – population growth rate 1991-2001 (in %). The settlement with the most unfavourable indicators is ranked the first and the one with most favourable is ranked the last.

Tab. 8. Usporedna analiza naselja Grada Sinja prema odabranim pokazateljima.
***A** – udio mladog stanovništva (do 15 godina) (2001.); **B** – udio starog stanovništva (iznad 65 godina) (2001.); **C** – prosječna starost (2001.); **D** – godišnja stopa prirodne promjene 1981.-1991. (u ‰); **E** – godišnja stopa prirodne promjene 1991.-2001. (u ‰); **F** – stopa porasta stanovništva 1981.-1991. (u %); **G** – stopa porasta stanovništva 1991.-2001. (u %). Naselje s najlošijim pokazateljima nalazi se na prvom mjestu, a ono s najboljim pokazateljima na posljednjem mjestu.*

Rank	Settlement	A	B	C	D	E	F	G
1	Zelovo	15.6	21.7	41.4	-4.1	-7.7	-23.5	-23.0
2	Gljev	15.4	20.7	41.8	-5.5	0.8	-33.1	-14.6
3	Bajagić	19.1	22.6	41.0	2.7	-1.3	-14.3	-4.4
4	Lučane	17.8	13.8	37.3	1.1	-0.6	-7.6	-2.8
5	Obrovac Sinjski	21.2	15.1	36.9	4.0	-2.0	-7.3	0.6
6	Turjaci	22.5	14.7	36.3	3.6	2.6	-21.1	5.9
7	Radošić	22.3	13.3	35.5	4.6	-0.8	-2.1	1.0
8	Glavice	20.0	12.7	36.4	5.4	2.4	-1.2	4.1
9	Suhać	22.0	11.2	35.0	3.7	1.9	-12.9	0.0
10	Čitluk	23.2	11.2	35.2	2.0	5.9	-23.6	17.4
11	Brnaze	21.8	10.6	35.0	6.5	6.8	-20.3	12.6
12	Jasensko	24.2	12.6	34.7	6.6	2.7	14.6	-1.4
13	Sinj	21.6	10.5	35.1	12.5	8.9	25.8	5.1
14	Karakašica	23.8	10.0	34.1	8.9	9.8	8.1	12.4

However, from demographic point of view, Zelovo has the least chances for survival or even recovery, considering the relevant indicators and the small population in comparison to other settlements. Compared to central and upper part of the population pyramid, the base is extremely narrow, which indicates long-term low birth rates and aging of the population (Fig. 5). Additional negative impact of the age and sex composition on future demographic development of this settlement can be observed through sex ratio, particularly in fertile cohorts. The overall sex ratio in this settlement in 2001 was 118, which is unusual considering the fact that there are usually more females than males due to longer life span of women. The sex ratio in wider fertile cohort (aged 15-49) was 186.7, i.e. there were approximately 187 males per 100 females, which indicates seriously disrupted balance between males and females of that age group. However, the situation is even more alarming if we analyze the sex ration in narrow fertile cohort (age groups 25-29 and 30-34); the sex ratios in those age groups were 150 and 750, respectively.

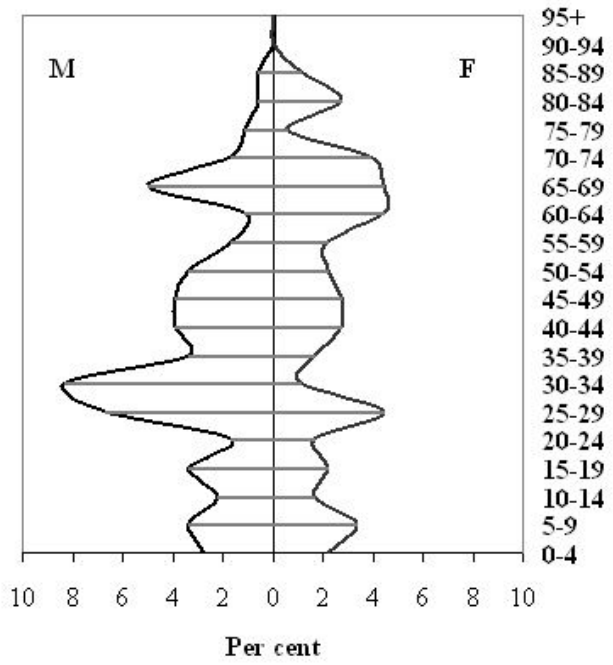

Fig. 6 Population pyramid of Zelovo in 2001
Sl. 6. Dobno-spolna struktura Zelova 2001. godine

So, we can suppose that in the near future this settlement is bound to die out, particularly if we bear in mind that only one or even no child is born in Zelovo each year and that the number of young, fertile population is very low. Furthermore, this is a very small settlement with less than two hundred inhabitants, so its revitalization is even more questionable.

Conclusion

Although there is a general opinion that Dalmatinska zagora is a depopulative area, there are still some differences among its certain parts. Namely, many small, rural settlements have been depopulating for several decades, but many urban centers are still gaining population due to in-migration from the surrounding rural areas. The Town of Sinj can serve as a model or a case study for the general population trends in Dalmatinska zagora, since it incorporates both an urban center and several rural settlements surrounding it. Generally looking, the investigated area has positive general population trend, the increase in the second half of the 20th century (from 1948 to 2001) was 73.3 per cent, but there were significant differences between the settlements included in the Town of Sinj. Five settlements recorded population decrease in that period, while the remaining nine settlements were gaining population. However, the largest increase was recorded in the central settlement – Sinj. In the last two intercensal periods the population increase was ensured exclusively by natural increase, because the net migration was negative. Age and sex composition analysis shows that the population of the Town of Sinj is aging, and after analyzing all the relevant demographic indicators we can conclude that Sinj, as the central and only urban settlement of the whole Cetinska Krajina, is the only actual developmental pole in this area with the best prospects for the future development. The situation is also favorable in the settlements that are situated near the central settlement, while the situation in the settlements that are situated peripherally will continue to deteriorate.

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SAŽETAK

Vera Graovac, Martin Glamuzina: Suvremene demogeografske promjene u Gradu Sinju

Područje koje se često koristi kao primjer izrazitoga depopulacijskog područja u Hrvatskoj jest Dalmatinska zagora. Međutim, nisu sva područja u Dalmatinskoj zagori podjednako zahvaćena depopulacijskim procesima, a u onima koja su ipak zahvaćena ovim procesima, postoje znatne razlike u intenzitetu. Grad Sinj može se uzeti kao dobar primjer područja u Zagori čija pojedina udaljenija ruralna naselja depopuliraju, dok centralno naselje i ruralna naselja bliže centralnom bilježe populacijski rast. Grad Sinj obuhvaća 14 naselja i površinu od 181 km^2, a prema posljednjem popisu stanovništva imao je 25 373 stanovnika.

U usporedbi s brojnim drugim dijelovima Hrvatske, pogotovo dijelovima Dalmatinske zagore, Grad Sinj nije bio tako izrazito zahvaćen depopulacijom u drugoj polovini 20. st. Naime, u razdoblju 1948.-2001. broj stanovnika Grada Sinja povećao se za 63,4% međutim, primjetne su razlike ukoliko se taj pokazatelj analizira na razini naselja. Od ukupno 14 naselja samo ih je pet zabilježilo pad broja stanovnika (Lučane -3,0%, Obrovac Sinjski -10,0%, Bajagić -25,6%, Gljev -47,7% i Zelovo -70,2 %), dok su tri naselja zabilježila porast iznad 50,0% (Karakašica 51,6%, Brnaze 88,3% i Sinj 211,4%).

U međupopisnim razdobljima 1948./1953. i 1953./1961. samo su dva naselja zabilježila smanjenje broja stanovnika. Sve do kraja 1970-ih u ovom je području većina stanovništva bila zaposlena u djelatnostima primarnog sektora (poglavito u poljoprivredi). Nakon Drugoga svjetskog rata mnoga područja u Hrvatskoj bila su razrušena, proces industrijalizacije još nije bio doživio svoj potpuni procvat, poljoprivredno zemljište bilo je važan prirodni resurs, stoga migracije na relaciji selo-grad nisu bile intenzivne i ruralna područja nisu bila značajnije depopulirala. Nadalje, stope nataliteta u poslijeratnom razdoblju rezultirale su visokim stopama prirodnog prirasta.

U sljedećim međupopisnim razdobljima broj depopulirajućih naselja povećao se na šest (1961./1971.), zatim na sedam (1971./1981.) te na devet (1981./1991.). Nakon 1960-ih u Hrvatskoj se intenzivirao proces industrijalizacije, što je izazvalo snažne migracije iz ruralnih i slabije razvijenih područja u gradove te u inozemstvo. Unatoč činjenici da je velik dio naselja u sklopu Grada Sinja gubio stanovništvo, broj stanovnika u Gradu povećavao se, i to uglavnom zahvaljujući povećanju broja stanovnika u samom Sinju kao centralnom naselju čitave Cetinske krajine. Porast u naselju Sinj nije bio uzrokovan samo pozitivnim prirodnim kretanjem već i doseljavanjem stanovništva iz susjednih naselja koja su, prema tome, gubila stanovništvo. Socio-ekonomska preobrazba u razdoblju 1953.-2001. najbolje se očituje u gospodarskoj strukturi stanovništva. Naime, 1953. godine čak 62,2% stanovništva bilo je zaposleno u primarnom sektoru, dok je taj udio 2001. godine iznosio tek 5,7%.

U drugoj polovini 20. st. Grad Sinj imao je pozitivno prirodno kretanje, što je imalo pozitivan utjecaj na demografska kretanja ovog područja unatoč negativnoj migracijskoj bilanci. Međutim, ukoliko se usporede posljednja dva međupopisna razdoblja, dolazimo do zaključka da se prirodna promjena smanjila za 24,7%, a natalitet za 7,7%. U razdoblju 1981.-1991. samo su dva naselja imala negativno prirodno kretanje (Gljev i Zelovo), dok je u idućem međupopisnom razdoblju broj takvih naselja bio pet (Bajagić, Lučane, Obrovac Sinjski, Radošić i Zelovo).

U razdoblju 1981.-1991. samo su tri naselja imala pozitivnu migracijsku bilancu (Glavice, Jasensko i Sinj s Brnazama). U sljedećem međupopisnom razdoblju Grad Sinj zabilježio je negativnu migracijsku bilancu. Od ukupno osam depopulacijskih naselja u razdoblju 1981.-1991. u njih šest glavni uzrok depopulacije bila je negativna migracijska bilanca, dok su u preostala dva naselja uzrok depopulacije bile i negativna prirodna promjena i negativna migracijska bilanca. S druge strane, 1991.-2001. unutar Grada Sinja bilo je deset depopulacijskih naselja od kojih je u šest uzrok depopulacije bila negativna migracijska bilanca, dok je u preostala četiri depopulacija bila rezultat kombiniranog učinka negativne prirodne promjene i negativne migracijske bilance.

U razdoblju 1971.-2001. udio mladog stanovništva smanjio se za 9,6%, dok se udio zrelog i starog stanovništva povećao za 6,5% odnosno 3,2%. Prema popisu stanovništva iz 1971.

godine nijedno naselje nije imalo indeks starenja iznad 40, dok je taj pokazatelj 2001. godine bio iznad kritične vrijednosti u svim naseljima. Tri su naselja imala više staroga nego mladog stanovništva (Zelovo, Gljev i Bajagić). Analizom sedam demografskih pokazatelja došlo se do zaključka da su demografski najugroženija naselja Zelovo, Gljev i Bajagić, jer imaju više staroga nego mladog stanovništva, prosječna dob stanovništva je iznad 40 godina, bilježe prirodni pad ili neznatan porast te međupopisno smanjenje broja stanovnika.

Na temelju navedenoga može se zaključiti da je porast broja stanovnika u Gradu Sinju u posljednja dva međupopisna razdoblja bio osiguran isključivo prirodnim prirastom, jer je migracijska bilanca bila negativna. Pozitivne, odnosno manje negativne, demografske trendove bilježi naselje Sinj i njemu bliža naselja te stoga imaju povoljnije preduvjete za daljnji razvoj, dok se demografska situacija u periferno položenim naseljima neprestano pogoršava i prijeti im izumiranje.