



Centre for Research on Settlements and Urbanism

Journal of Settlements and Spatial Planning

Journal homepage: <http://jssp.reviste.ubbcluj.ro>



Agricultural Population of Central Serbia at the End of the 20th and the Beginning of the 21st Century. Case Study: Goc Mountain and Its Foothill

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Keywords: *Goc and its foothill, agricultural population, distribution*

ABSTRACT

In this paper there has been elaborated an analysis of distribution of arable and agricultural land on the territory of Goc and its foothill, then the distribution and density of agricultural population that live on its territory. The analysis refers to the end of the 20th and beginning of the 21st century. Special attention is given to active agricultural population. The received results show that the number of agricultural population has been decreasing. The importance of the paper is in the fact that it will enrich the knowledge about the population and settlements of the Goc Mountain and the West Morava valley.

1. INTRODUCTION

From Kosovo and Metohija to the West Morava valley extend mountains of the Kopaonik region. The most northerly situated is the Goc Mountain. The northern slopes and the foothill of Goc belong to the valley of West Morava, which is, according to its natural characteristics, in relation to the mentioned region the most fertile and covers the largest area. As such, it represents an important agricultural region. From the total area of Goc and its foothill, to the foothill of Goc, i.e. the region between 166 and 500 m above sea level belong 241.1 km square or 72.2% (Ковачевић, 2010, 37). Almost entire foothill is situated in the West Morava valley.

2. AGRICULTURAL AND ARABLE LAND

The area of Goc and its foothill (334.7 km square) in physically geographical sense is smaller than the administrative area (402.1 km square), which was determined by Municipal Office of real estate registry.

Administrative borders represent 1/5 (20.1%) of the area and comprise completely all regions, which are found in natural borders. The data on agricultural and arable land refer to administrative areas of settlements in Goc and its foothill. It is impossible to reduce the data of administrative to natural borders. Because of that, their data will be used in the analysis of agricultural and arable land, and also the number, density and distribution of agricultural population of Goc and its foothill.

Agricultural areas comprise 2/5 (41.9%) of the administrative area of Goc and its foothill. Agricultural unbroken regions that cover the largest area are found next to the West Morava flow, in the district of village settlements, which are not urbanized in the extent of which are the districts of suburban settlements of Kraljevo and Vrnjacka Banja. Among them excels the district of Podunavci with 83.4% of agricultural area. The share of agricultural area in the total one, which exceeds 70%, has Ratina, Zaklopaca and Stulac (fig. 1).

From 25 real estate registry municipalities of Goc and its foothill, half of them have more than 50% of

agricultural area in total (Служба за катастар непокретности, 2005, 2005а, 2005б). Fertile alluvial soil in the West Morava valley and other kinds of soil on hilly terrains and levelled peaks of Goc, which with the application of agro technical measures can become fertile, in the conditions of continental and sharply continental climate, with sufficient amount of surface and underground waters, make conditions for agricultural production of Goc and its foothill optimal (Ковачевић, 2010, 187).

Agricultural areas have the least share in districts of mountain settlements Kamenica (7%), Goc (21%) and Rsavac (27.3%). In the zone of mountain settlements, the exploitation of agricultural soil is extensive [2, p. 190, p. 6].

Settlements of the municipality Trstenik, which belong to Goc and its foothill, are mutually

different according to the share of agricultural area. Dublje, settlement on hilly terrains, has the least share of agricultural area (37.1%) in the total area of districts compared to the others, which have over 2/5. Brezovica has the largest share of agricultural area 57% (fig. 1). Considering the fact that Office of real estate registry in district Trstenik does not have data that are more precise on the structure of agricultural area, the only information about it has been gathered in the field and according to its nature is not precise. According to it, pastures and meadows have the largest share in the total agricultural area. Corn and vegetable cultures are cultivated along the river Popina, which is used for irrigation, in the space, which is according to its small area and has a relief in the form of narrow and long valley. Mountain settlement Stublica has certain areas also covered with orchards.

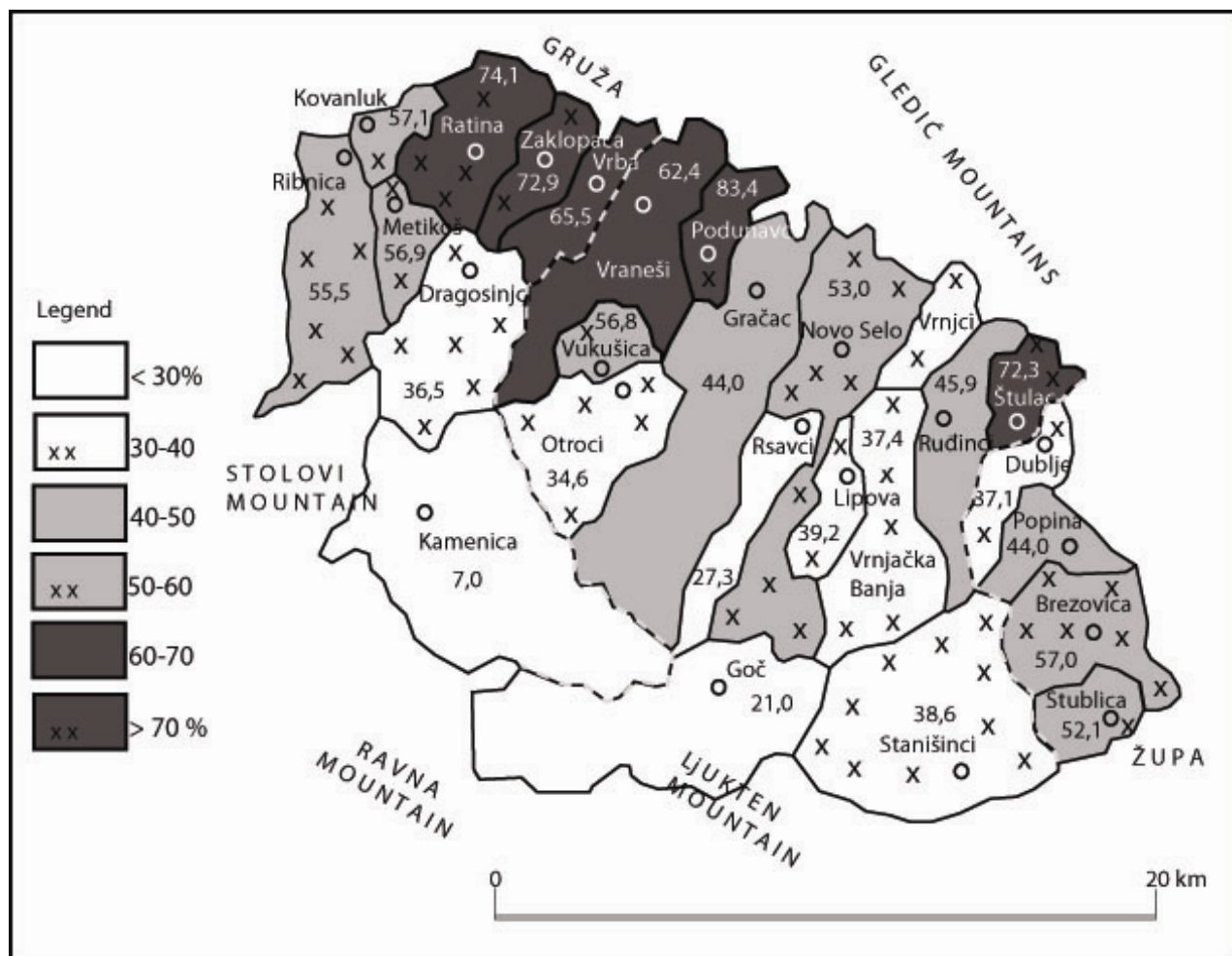


Fig. 1. The share of agricultural regions in total according to real estate registry districts in the territory of Goc and its foothill.

The sizes of agricultural areas are also observed by Republic Bureau of statistics on municipal level. The municipality Vrnjačka Banja covers 59.4% of the territory of Goc and its foothill. From the entire area of municipality Kraljevo, to Goc and its foothill belongs 8.2%, and from the municipality Trstenik 8.3%. For that reason, the records on the range of sizes of agricultural areas have been observed only for the

territory of the municipality Vrnjačka Banja. According to them, on the territory of municipality Vrnjačka Banja, during the last ten years, from 1996 to 2005, agricultural areas have not changed and have been found mainly in private possession (99.45%) (Републички завод за статистику, 1997-2006).

Arable land, in contrast to agricultural, exclude pastures. Records on arable land for settlements of

municipality Trstenik, according to the Office of real estate registry of Trstenik, do not exist. The area of real estate registry districts represents 9.3% of Goc and its foothill. Without them, arable land covers almost one-third, 32.0% of Goc and its foothill.

As it excels in all real estate registry districts of Goc and its foothill in agricultural land, in districts Podunavac (77.9%), Ratina, Zaklopača and Stulac there is also the largest portion of arable land. There is more than 50% of arable land in neighbouring villages of West Morava region, Vranesi, Vrba and Kovanluk. Districts which are not concerned with communication axes and which are mainly on hilly terrains have between 40 and 50% of arable land, and those are the

districts of Novo Selo, Vukusica and Metikos.

The share of arable land is lower by about 10% in districts which spread partly along West Morava valley, over which the road M-5 goes by, which enabled them to develop other activities that support urbanization, and the other part of districts that spread on the hilly terrain, as it is the case of Rudjinci, Gračac and Vrnjačka Banja with Vrnjci (fig. 2). Less than 30% of arable land has larger districts on hilly terrains in which there are more pastures or forests, such as districts of Lipova, Ribnica, Otrok, Dragosinjac, Rsavac and Stanisinci. There is the least arable land in districts of the highest settlements of Goc and its foothill, Goc (9.3%) and Kamenica (3.8%).

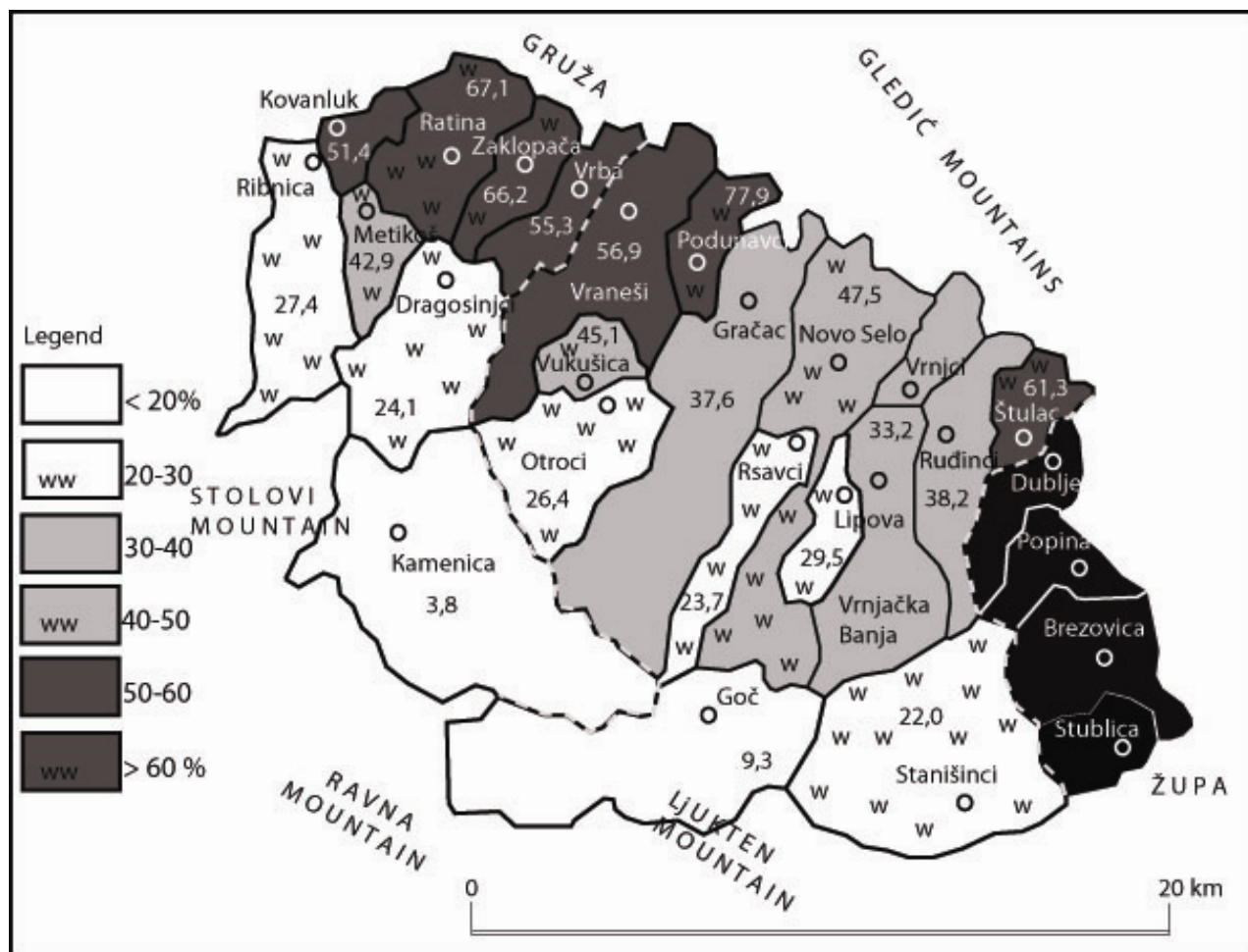


Fig. 2. The share of arable land in the total, on the territory of Goc and its foothill.

On the territory of municipality Vrnjačka Banja, during the last ten years, from 1996 to 2005, arable lands have not been either increased or decreased.

They have been in private possession (99.7%) (Републички завод за статистику, 1997-2006).

Agriculture and arable areas of Goc and its foothill are present and stable, and upon that fact is based presumption on massive presence of agriculture population.

3. THE DYNAMICS OF AGRICULTURAL POPULATION

In the middle of the second part of the 20th century Milanovic (1973, 201) has concluded that the town development and spreading of its influence is followed by gradual de-agrarization of suburban areas. According to him, the number of employed people from suburban areas in town economy was considerably

higher than in other villages, which influenced the decrease in the number of agricultural population.

The large percentage of non-agricultural population has appeared in Ribnica (86%).

Goc and its foothill has been a typical agrarian environment because almost every third inhabitant (30%), according to population register in 1971, belonged to agrarian population. In the next years, when population was registered in 1981, two of five inhabitants belonged to agrarian population. The share of this population has decreased in 1991 to 12.1% (table 1). According to the population register of 2002, the share of agricultural population amounted 5.7%. It is almost half less than the average for Central Serbia, which in 2002 amounted 11.0%. From the population register in 1971 to the one in 2002, the agricultural population of Goc and its foothill has decreased with 79.8% (Ковачевић et. al, 2007, 60). Its share in the total population is almost 5.3 times smaller.

The most intense decrease of agricultural population has happened in times of the most intensive industrialization, from 1971 to 1981, when its share decreased with 10.6% (table 1).

The de-agrarization of Goc and its foothill has been even more intensive if we have in mind the fact that during the decreasing of the number of agricultural population, the total number of population has increased (Ковачевић et al, 2007, 52).

De-agrarization has been more intensive in suburban areas, than in mountain settlements and settlements over which the road M-5 goes by (Ковачевић et al, 2007b).

According to the results of the last population register, the settlements with the largest share of agricultural population in the total, are the settlements with the lowest number of population and those that are located on higher heights above the sea level, for example: Vukusica (54.7%), Stublica (36.9%), Brezovica (32,0%), Stanisinci (28.9%), Goc (27.9%) etc.

Table 1. Agricultural population of Goc and its foothill, according to the results of population register from 1971 to 2007.

Year	Total	Agricultural population	
		Number	(%)
1971	38768	11615	30.0
1981	37001	7182	19.4
1991	39176	4737	12.1
2002	41533	2349	5.7

Source: (Републички завод за статистику, 2004а), (Савезни завод за статистику, 1972, а, б, в, 1981, ц и 1994, а) and (Републички завод за статистику, 2003, и).

The process of de-agrarization comprises younger population. Unfavourable age structure of agricultural population, which consists of older population, causes further decrease of agricultural population [9, p. 93].

The rest of the settlements have less than 20% of agricultural population. From the total number of 26 settlements, almost 70%, 18 settlements have less than 10% of agricultural population [11].

Considering the fact that almost $\frac{3}{4}$ (72.2%) of the territory of Goc and its foothill is located on the terrain which is lower than 500m (Ковачевић et al, 2007, 61), it can be concluded that property could have been enlarged. However, during the field research it has been determined that the most of the agricultural population is engaged in small property agriculture, which is based on cattle breeding, fruit and vegetable growing. The rest of the land is cultivated by non-agricultural population (Ковачевић et. al, 2007, 61).

4. THE DYNAMICS OF THE ACTIVE AGRICULTURAL POPULATION

In 1971, the active agricultural population represented 16.2% of the total number of population in Goc and its foothill. According to the results of population Census from 2002, the share of this population has been 3.9 times less and it has amounted 4.1% (table 2). The decreasing of active agricultural population in the total has been influenced by depopulation and emigration of population from rural towards urban areas of Goc and its foothill.

The share of active agricultural population of Goc and its foothill in the total (4.1%) is compared to the same one which relates to the territory of Central Serbia (7.4%), according to the results of Census from 2002, 1.8 times smaller. However, it is similar to the share calculated for the European Union, which in 2002 amounted 4.0% [19, p. 82]. Considering that fact, there is enough agricultural population for achieving maximal productivity and the quality of agricultural production. The share of active agricultural population in active population has also decreased almost 4 times from 1971 to 2002 (table 2). According to that, in 1971, from five active working people almost two were engaged in agriculture.

According to the Census in 2002, from ten active working people, only one was in agriculture. In the territory of Central Serbia, 16.2% of active agricultural population is part of active population. According to that, the process of de-agrarization has reduced the number of people who are actively working in agriculture. In the region of Goc and its foothill it was more intensive, compared to Central Serbia. However, field researches have shown that active agricultural population, according to the Census from 1971, is still engaged in agriculture, but as additional activity, while they make their main income in other economic branches. The share of active agricultural population in agricultural population has from the Census in 1971 until 2002 increased by 19%, while for the same value decreased the portion of supported agricultural population.

Decreasing the portion of supported agricultural population is a result of population growing old. It can be interpreted in two ways. With the ageing of population there are less children of the active agricultural population, which most often represent the supported agricultural population.

According to the results of the last two Censuses, the absolute number of total agricultural population has decreased, while the ratio of shares of active agricultural and supported agricultural population have remained almost unchanged (table 3).

Table 2. Active agricultural population of Goc and its foothill according to the results of Censuses from 1971 to 2002.

Year	Total active population	Number	Active agricultural population (in %)		
			Share in total population	Share in active population	Share in agricultural population
1971	16182	6268	16.2	38.7	54.0
1981	16798	4931	13.3	29.4	68.7
1991	17796	3436	8.8	19.3	72.5
2002	17599	1714	4.1	9.7	73.0

Source: (Републички завод за статистику, 2004, а), (Савезни завод за статистику, 1972, а, б, в, 1981 и 1994, а) and (Републички завод за статистику, 2003, и)

The share of supported agricultural population has stopped decreasing. The share of the young in supported agricultural population is actually still decreasing. It is being replaced by elderly active agricultural population, which has not provided personal income, and is because of not being able to work entering the category of supported agricultural population.

Table 3. Activity of agricultural population of Goc and its foothill according to the results of the Censuses from 1971 to 2002.

Year	Total agricultural population	Active agricultural population		Supported agricultural population	
		Number	(%)	Number	(%)
1971	11615	6268	54.0	5347	46.0
1981	7182	4931	68.7	2251	31.3
1991	4737	3436	72.5	1301	27.5
2002	2349	1714	73.0	635	27.0

Source: (Републички завод за статистику, 2004б), (Савезни завод за статистику, 1972, б, ф, и, 1981, и и 1994, а) and (Републички завод за статистику, 2003, и)

Comparing the results of the last Census, the share of active agricultural population in the total agricultural population in the territory of Goc and its foothill (73.0%) has been higher as compared to the share for the Central Serbia (67.1%). Considering the fact that the population of Serbia is growing old, agricultural population of Goc and its foothill is younger than the agricultural population of Central Serbia. Advantages of geographic position and natural characteristics have influenced positively this fact.

5. AGRICULTURAL POPULATION DENSITY

The growth of the agrarian population, in the period from 1971 to 2002, compared to agricultural (by 16.4 inhabitants on 100 ha agricultural area or by 6.6%), arable land and land under cultivation and gardens (by

7.8% each) on the territory of Goc and its foothill is directly conditioned by increase in the number of inhabitants. In addition to that is the insignificant decline of density during the Census in 1981, when there was recorded the decline in the number of inhabitants (Ковачевић, 2007а, 154) (table 4).

The number of agricultural population on 100 ha of agricultural land has been reduced 4.9 times from the Census in 1971 to the one in 2002. The number of agricultural population on 100 ha of arable land has been reduced 5.1 times in the same period of time.

The decline in density of active agricultural population was less intensive. On 100 ha of agricultural area, it was reduced 3.6 times, on 100 ha of arable land and on 100 ha of land under cultivation and gardens by 3.7 times. The stabilization of density of rural population is likely if possibilities for the development of agriculture of Goc and its foothill are recognized, and the role and responsibilities of local government are strengthened in changes for raising the quality of life in the village. It refers to improvement of communications and telecommunication infrastructure and increasing the health, cultural and educational level of agricultural population.

6. DISTRIBUTION OF AGRICULTURAL POPULATION

Analysis of the density of the number of population on 100 ha of agricultural area shows the existence of regional differences.

According to the Census of 1971, the highest agrarian density of population, higher than 300 inhabitants on 100 ha of agricultural area, has been recorded in town and suburban areas of Goc and its foothill, such as Vrnjacka Banja with Vrnjci (991.3 inhabitants/100 ha agricultural areas), Ribnica (828.3) and Kovanluk (593.7) (fig 3). Agrarian density is declining towards the west and the east of Goc and its foothill, getting away from the most urbanized areas,

along the West Morava valley. The smallest density, of less than 100 inhabitants on 100 hectares of agricultural area, is in the settlements of southern

mountain half of Goc and its foothill, such as Goc (31.4), Stanisinci (55.0), Stublica (75.2), Kamenica (82.8) and Dragosinjci (99.3).

Table 4. Agrarian population of Goc and its foothill according to the results of the Census from 1971 to 2002.

Types of density	1971	1981	1991	2002
Number of population on 100 ha of agricultural area	229.9	219.4	232.3	246.3
Number of population on 100 ha of arable land	312.5	297.7	318.1	339.0
Number of population on 100 ha of land under cultivation and gardens	755.8	720.0	769.4	820.0
Number of agricultural population on 100 ha of agricultural area	68.9	42.6	28.1	13.9
Number of agricultural population on 100 ha of arable land	85.4	54.5	34.8	16.8
Number of agricultural population on 100 ha of land under cultivation and gardens	206.4	131.8	84.0	40.7
Number of active agricultural population on 100 ha of agricultural area	37.2	29.2	20.4	10.2
Number of active agricultural population on 100 ha of arable land	45.8	38.4	25.7	12.5
Number of active agricultural population on 100 ha of land under cultivation and gardens	110.8	93.0	62.3	30.2

Source: (Републички завод за статистику, 2004б, д), (Савезни завод за статистику, 1972, б, ф, н, 1981, ц, д и 1994, а, б) and (Републички завод за статистику, 2003, и)

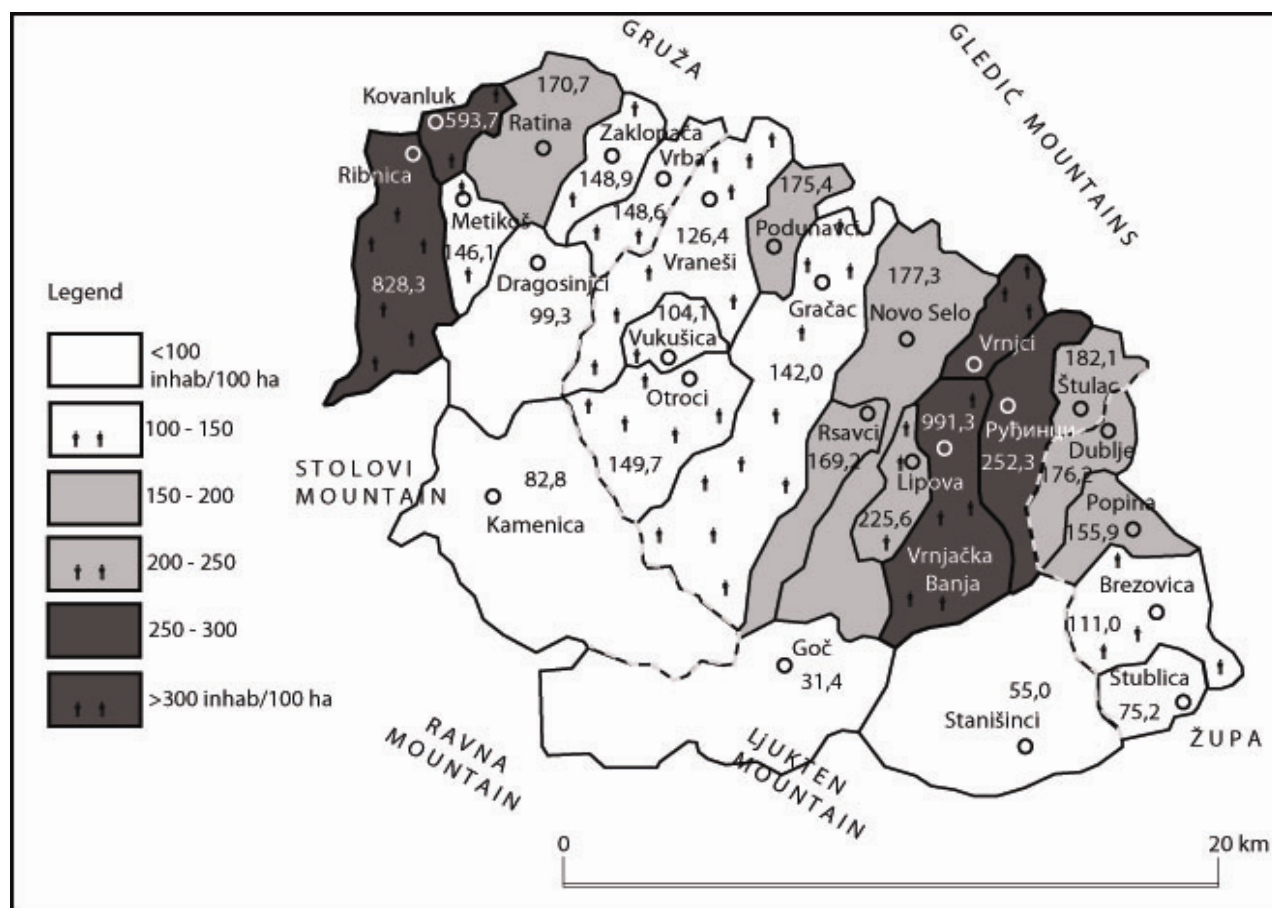


Fig. 3. The number of population on 100 ha of agricultural area, from 1971.

According to records from Census of 2002, the growth in number of population has not equally influenced the increasing number of agricultural population on 100 ha of agricultural area.

In districts of settlements in which the density of agricultural population was small, after the three decades it is even smaller.

For example, in the village Goc it has been reduced to 9.5% or more than three times, in Stanisinci to 27.8% or more than twice etc (fig. 4).

In settlements with the largest density of agricultural population in 1971, the density has increased, according to the Census from 2002.

The growth is a result of increasing the number of agricultural population and decreasing the

agricultural area, which occurred as a consequence of the process of urbanization.

The highest density of the agricultural population has been recorded in Vrnjačka Banja and Vrnjci (1275.7 inhabitants/100 ha of agricultural area) and in Kovanluk, a suburban area of Kraljevo (1108.9).

The highest concentration of the agricultural

population in urban and suburban areas of Goc and its foothill can be explained by profitability of being engaged in this activity close to the markets of Kraljevo and Vrnjačka Banja.

In field researches it has been determined that inhabitants of the suburban areas have arable land in other village districts.

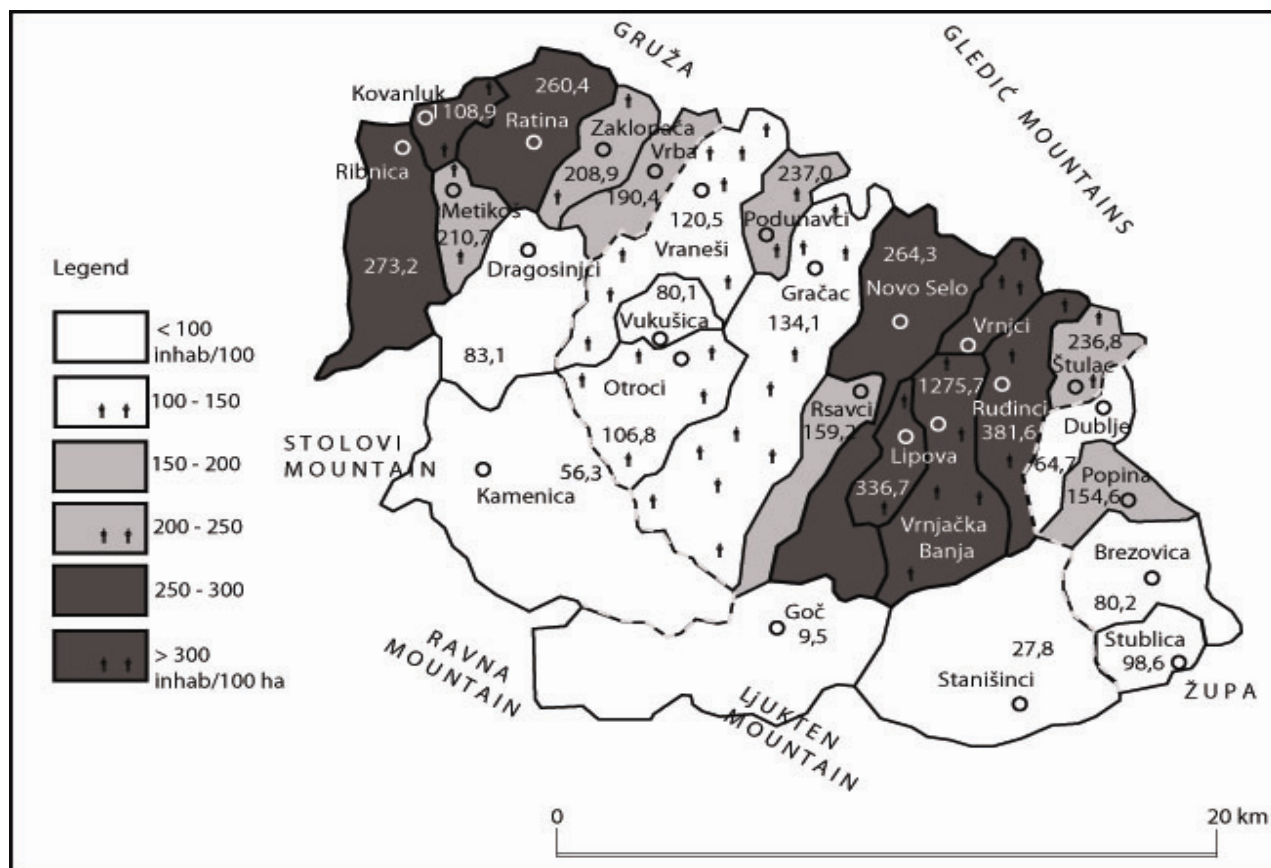


Fig. 4. The number of population on 100 ha of agricultural area, in 2002.

7. CONCLUSION

Based on the fact that agricultural areas represent 2/5 of administrative area of Goc and its foothill it can be said that this region on the northern side of Kopaonik mountains has solid predispositions for the development of agriculture, then for the presence of more important number of agricultural population.

Relief predispositions of Goc and its foothill have conditioned the differences among districts of settlements in the presence of agricultural and arable land, but also in density of agricultural population.

The results of the research have confirmed that the urbanization has reduced the agricultural areas and in that way increased the density of agricultural population, especially in suburban areas of Goc and its foothill.

Although during the second half of the 20th and the beginning of the 21st century the number of

population has increased on the territory of Goc and its foothill, from 1971 to 2002 the number of agricultural population has decreased by 79.8%. De-agrarization has been conditioned by urbanization, especially in suburban areas of regional centres on the territory of Goc and its foothill, but also in its immediate vicinity. The share of active agricultural population in the total and active population has decreased, but it has increased in agricultural population.

The field research and demographic analysis have explained the fact that population is growing old, i.e. with reducing the number of supported population. Comparisons have confirmed the similarity of the share of active agricultural population in the total with the same calculated for the European Union, which pointed out that there is enough for achieving the maximal productivity and quality of agricultural production.

In Materials of European Economic Community (1989) the possible future urban exodus towards the rural regions has been assumed.

Vicentijevic and Vujovic (2004) talk about the projection of European Union, according to which the villages are characterized by the possibilities: of organizing diverse production, permanent stay and living and occasional enjoying in natural beauties and landscapes.

According to the same authors, these are the basic trends of the development of rural Europe in the future. It can also be a road sign for the future of rural Serbia. Rural Europe is in the process of economic diversification.

Secondary and tertiary activities are spreading in its rural regions. Kovacevic (2010, 291-294) has determined the presence of the same processes in the territory of Goc and its foothill.

Putting an end to the decreasing number of agricultural population it is possible only with the help of the government of Serbia. Its measures have to determine priorities selectively and clearly, which would be supplemented, combined and synchronized with measures and activities of local government, which are based on natural, economic and human resources.

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