

# 17. Spatial-functional transformations of the metropolitan area of Belgrade

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Changes in area and spatial-functional structure of the Belgrade settlement and its administrative area as the consequence of the complex developmental processes are intensive particularly in the second half of the 20th century. By the time the size of the territory of the Belgrade settlement increased intensively which also resulted in the corresponding administrative-territorial changes. The urban area of Belgrade expanded permanently, influenced by the influx of population from the interior of Serbia as well as from the former Yugoslav republics. The surrounding rural settlements were gradually disappearing by the expansion of the urban area through the construction of housing zones and blocks, then infrastructural and super structural systems, economic and non-economic facilities. The transformation process of the rural settlements from the agricultural into the urban area resulted in their growing together and joining the Belgrade settlement, i.e. its spatial expansion. The urban expansion was followed by the intensive process of industrialisation and tertiary activities, i.e. the change in the structure of the activities not only of the Belgrade settlement but of all settlements in its considerable functional area.

The Belgrade settlement belonged to its administrative area (City of Belgrade, or Belgrade urban region) which expanded by the middle of the 20th century and was finally constituted in the 1970s. The City of Belgrade received the status of the City of Belgrade by Law of territorial organisation of the Republic of Serbia (2007). The borders of the administrative area did not literally follow the changes of borders of the functional influence of the city.

## 17.1. Territorial expansion of the Belgrade settlement and its administrative area

Before World War I, in the times of the Kingdom of Serbia, the Belgrade settlement consisted of six areas on the area of 1200 ha. By law of the name and division of the Kingdom of Yugoslavia in 1929, a special capital administrative unity of Belgrade was formed in community with Zemun (urban settlement of Srem) and Pančevo (urban settlement of Banat, at the left bank of the Danube), which was also verified by the Constitution of 1931. The administration of the city of Belgrade included the area of 378 km<sup>2</sup> with the population of 238,800. The possibilities to unite the three urban settlements of Belgrade, Zemun and Pančevo through the developmental processes and by physical expansion in the conditions of the economic underdevelopment and social lagging did not exist actually. However, their linking into the unique territorial-administrative unit was only partially realised after World War II.

By the formation of the Autonomous Province of Vojvodina, Pančevo separated from the Belgrade area, while the part of Belgrade remained on the Banat side with the Krnjača municipality which later went into the structure of the urban municipality of Palilula. The expansion of Belgrade to the Srem side was achieved by covering the swampy alluvial plateau at the confluence of the Sava and the Danube where the construction of New Belgrade and connection of the urban tissue with Zemun began at the end of the 1940's.

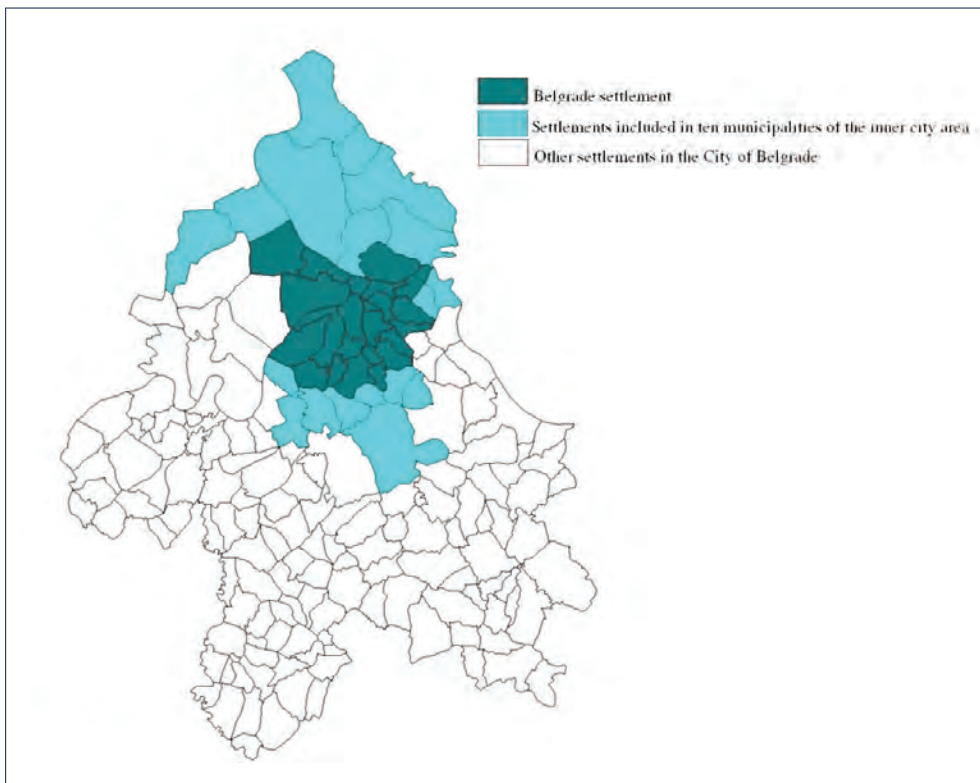
The inner area of the city of Belgrade was defined by Law on areas and administrative districts in the National Republic of Serbia in 1959 and it consisted of 10 municipalities the names of which were later changed insignificantly. The urban whole of the present Belgrade settlement consists of the urban parts of the following municipalities: Voždovac, Vračar, Zvezdara, Zemun, New Belgrade, Palilula, Rakovica, Savski Venac, Stari Grad and Čukarica.

During the second half of the 20th century the Belgrade settlement was expanding to all directions and joined the surrounding rural settlements which gradually merged with the urban tissue. The parts of the city from those areas kept the names of the original settlements (e.g. Kumodraž, Mirijevo, Bežanija, Žarkovo, Rakovica, Kneževac, etc). Consequently, the total area of the present-day Belgrade settlement is 1294 km<sup>2</sup> and the population number is about 1.120.000.

In the times of the Kingdom of Serbia, the direct encirclement of the Belgrade area had the status of the separate administrative unit, as District of Belgrade. The total area of the district was 2025 km<sup>2</sup>, while the urban agglomeration of Belgrade, located at the border position, had 697.000 inhabitants in 1900. After World War I, by the formation of the Kingdom of the Serbs, Croats and Slavs, and afterwards the Kingdom of Yugoslavia, Belgrade as the capital was free of the border position, acquiring safe encirclement and a chance to develop and expand more equally on both sides of the former border rivers of the Sava and the Danube but not just to the south. By law from 1929, the Belgrade district was formed including 9 administrative districts and 123 municipalities on the total area of 3105 km<sup>2</sup> and the population of 319.300. This territorial division was the basis for the further expansion and final constitution of Belgrade administrative area.

In the early 1960s, the Belgrade administrative area had the status of the administrative district in a broader sense with 15 municipalities and 119 settlements on the area of 2402 km<sup>2</sup> and the population of 843.200. The inclusion of the municipalities of Obrenovac, Barajevo, Sopot and Grocka characterised the expansion of the Belgrade administrative area of this period. By the beginning of the seventh decade of the 20th century the administrative Belgrade area was completed by joining the municipalities of Mladenovac and Lazarevac. The last change from 2004 has related to the separation of the settlement of Surčin from the Zemun municipality, so that today the Belgrade administrative area has 17 municipalities (Figure 60). The figures of the last census showed that there were around 1.576.000 inhabitants in 157 settlements on the area of 3222 km<sup>2</sup>.

Figure 60: Administrative division of the City of Belgrade (Belgrade urban region).



## 17.2. Demo-economic and morphological processes in the area of the Belgrade administrative area

The population increased intensively on the whole administrative area of Belgrade in the period from 1971 to 2002. The increase prevailed in all suburban municipalities, but not in all urban ones. The central urban municipalities had the population decline in the whole period which pointed to the phase of urbanisation characterised by moving out of the city core and the conversion of the housing area into the business (Table 48). The urban municipalities participated with more than 80 % in the total population of the Belgrade administrative area.

Table 48: General data on administrative area of Belgrade with changes (territorial division of 2005).

Municipalities	Area (km <sup>2</sup> ) 2005.	Number of settlements 2005.	Population number 1971.	Population number 2002.	Index of population growth 2002/71.
Vračar	3	-	134.207	58.386	43,5
Savski Venac	14	-	84.291	42.505	50,4
Stari Grad	7	-	112.938	55.543	49,2
Voždovac	149	4	139.958	151.768	108,4
Zvezdara	32	-	92.200	132.621	143,8
Zemun	150	2	126.380	152.950	121,0
New Belgrade	41	-	50.507	217.773	431,2
Palilula	447	7	63.531	155.902	245,4
Rakovica	30	-	83.742	99.000	118,2
Čukarica	156	7	102.545	168.508	164,3
Urban area	1.029	20	990.299	1.234.956	124,7
Barajevo	213	13	16.552	24.641	148,9
Grocka	289	15	35.275	75.466	213,9
Lazarevac	384	34	45.675	58.511	128,1
Mladenovac	339	22	47.134	52.490	111,4
Obrenovac	410	29	53.260	70.975	133,3
Sopot	271	17	21.166	20.390	96,3
Surčin*	289	7	-	38.695	-
<b>Suburban area</b>	<b>2.195</b>	<b>137</b>	<b>219.062</b>	<b>341.168</b>	<b>155,7</b>
<b>CITY of BELGRADE (AA)</b>	<b>3.224</b>	<b>157</b>	<b>1.209.360</b>	<b>1.576.124</b>	<b>130,3</b>

Source: Municipalities in Serbia, 2003, 2006. Statistical Office of the Republic of Serbia, Belgrade.

Note: \* data for the municipality of Surčin for 1971 are included in the municipality of Zemun.

The events of the last decade from the last century, marked by deep social and economic difficulties, as well as by the political disturbances on the area of the former Yugoslavia, strongly influenced the population development of the City of Belgrade. That resulted in lower and lower rate of natural increase, emigration of mainly highly-skilled and young population in foreign countries, or in the phenomenon of refugees' moving from the former Yugoslav republics to Serbia and Belgrade (in the period from 1991 to 1995 about 706.000 of registered, mainly Serbian, population moved to Serbia, while a third of this total number settled the City of Belgrade).

Within the City of Belgrade, except the settlements which make the urban whole (those which are marked as "Belgrade part" in the census) there are settlements, according to the official statistics, which are proclaimed as the urban ones. The change of their total number can be followed through the census years. According to the 1971 census, there were 25 urban settlements, while by the 1981 census the number reduced on only 15 due to joining the urban whole of Belgrade. According to the census of 1991, three more settlements received the urban status, so that there were 18 of them. According to the last census the situation did not change. Above mentioned, the urban settlements are also the centres of all the suburban Belgrade municipalities except Barajevo. The largest urban settlements, not counting the large suburban areas of Belgrade, are the centres of the suburban municipalities-Lazarevac, Obrenovac and Mladenovac with over 23.000 inhabitants<sup>73</sup> (Živanović Z., 2006).

In the early 1990's, one third of the total workforce in Serbia was employed in the activities of the City of Belgrade. The strength of this area in a domain of the economy is perhaps best illustrated by the fact that the number of employed in Belgrade was a little higher than the total number of employed in Vojvodina during the ninth decade of the last century (Derić B., Smiljanić Z., 2004). The percentage of employed in the total population of the City of Belgrade (66.1 %) is over the average for Serbia (60.1 %). However, according to the 2002 census, the absolute number of employed on the territory of the City of Belgrade declined for one fourth in relation to the year of 1989, as the last year before the crises which seized Serbia.

There is significant inter-municipal difference in the proportion of employed. In the central urban municipalities of Stari Grad, Vračar and Savski Venac, the number of employed far exceeds the total population which is the confirmation of very strong daily migration of workers. Namely, the characteristic of the inner city centre is the continuous change of the housing area into the business one, the consequence of which is the considerably expressed function of labour in relation to the function of housing.

The inter-municipal differences are also significant in regard to the structure of employed which point to the social and economic, i.e. developmental heterogeneity of the Belgrade area<sup>74</sup>. The domination of tertiary and quaternary activities is extremely expressed in the urban area, with even more than 80 % in the municipalities of the central zone (Živanović Z., 2008).

<sup>73</sup> By Regional Spatial Plan of the AA of Belgrade of 2002, the urban settlements of Mladenovac and Lazarevac are defined as sub-regional centres, while the urban settlement of the Obrenovac municipality as developed urban centre.

<sup>74</sup> In favour of the mentioned is the comparison of the number of employed with the total areas of the municipalities which would point to a great concentration of employment in the municipalities that are small by the area, i.e. small range of employment in the municipalities that include great areas, lower degree of urbanisation.

Table 49: Structure of activities in 2002 in the City of Belgrade.

	Total employed	Primary sector		Secondary sector		Tertiary-quaternary sector	
		number	%	number	%	number	%
City of Belgrade	556.060	27.736	4,99	148.579	26,72	379.745	68,29

Source: The 2002 census.

Considering that the proportion of employment in the tertiary-quaternary sector considerably exceeded the values of the same index for the secondary sector (Table 49), the structure of employment in the economy of Belgrade can be considered as conditionally favourable. Namely, such structure is the index of following the developmental processes in more developed countries, wherein it has come to the sudden increase in the tertiary and quaternary activities by applying the accomplishments of the technological information revolution, by which the end of the domination in industrial mass production was marked. In least developing suburban municipalities, however, the insufficiently diversified economic structure, i.e. underdevelopment of the secondary sector of the economy has been the main cause of the increase of employed in the tertiary sector which has been, by the quality of services, far below the one which is characterised for objectively most developed parts of the City of Belgrade.

The employment in the City of Belgrade is not drastically reduced, especially when compared with the decline in the production, i.e. earned income. The total earned income in millions of the US dollars on the territory of the Belgrade area, however, decreased more than fivefold during the last decade of the 20th century. The central urban municipalities with the highest income clearly stand out. The particularly low level of this index is the characteristic of the suburban municipalities. The tertiary sector, in accordance with employment, has the highest relative proportion in the creation of the national income of the urban municipalities, while other two sectors are dominant in the suburban municipalities. The economies of Lazarevac and Obrenovac have become mono-structural more expressively (coal production, i.e. power production), which to a certain degree also relates to the municipality of Mladenovac. The municipalities of Barajevo and Grocka are characterised by the increase in the share of the primary activities, i.e. agriculture in earning the national income, which is only the confirmation of their weak development.

Table 50: Changes in land use in the area of administrative area of Belgrade.

Municipalities	Area (km <sup>2</sup> )	Agricult. land in total in %		Forest land in total in %		Building and other land in total in %	
		1971.	2005.	1971.	2005.	1971.	2005.
Vračar	3	-	-	-	-	-	100,0
Savski Venac	14	-	-	-	-	-	100,0
Stari Grad	7	-	-	-	-	-	100,0
Voždovac	149	63,8	63,1	20,8	19,5	15,4	17,4
Zvezdara	32	56,5	56,6	7,1	3,1	36,4	40,3
Zemun	150	75,1	68,3	6,6	-	18,3	31,7
New Belgrade	41	39,6	35,8	10,3	2,4	50,1	61,8
Palilula	447	66,9	66,7	16,9	13,6	16,2	17,1
Rakovica	30	-	41,4	-	13,3	-	45,3
Čukarica	156	63,4	53,1	16,8	3,2	19,8	43,7
Urban area	1.029						
Barajevo	213	76,1	71,1	19,5	22,5	4,4	6,4
Grocka	289	81,6	73,2	9,7	8,7	8,7	18,1
Lazarevac	384	69,6	60,5	18,4	16,9	12,0	22,6
Mladenovac	339	86,0	80,6	8,4	8,8	5,6	10,6
Obrenovac	410	81,3	74,6	7,5	7,6	11,2	17,8
Sopot	271	75,1	72,8	18,1	18,8	6,8	8,4
Surčin	289	-	69,4	-	8,0	-	22,6
<b>Suburban area</b>	<b>2.195</b>						
<b>CITY of BELGRADE (AA)</b>	<b>3.224</b>		<b>68,1</b>		<b>11,6</b>		<b>20,3</b>

Sources: Statistical yearbook of Belgrade, 1971, 2005 The City's Bureau for Statistics Nedović Z. (1986): "Changes in land use in the area of Belgrade". Collection of papers, Geographical Institute, Faculty of Natural Sciences and Mathematics in Belgrade, v. 33, Belgrade (p. 119-132).

The stated facts point to all the heterogeneity of the observed territory and conditional justification of its division into the urban part with a suburban one and the suburban part, considering that these are really two very different areas which have various categories of development within their internal borders. There are significant differences on the municipal level, as by the demographic, i.e. economic strength, so by the territorial scope of the observed municipalities, and consequently-the position, i.e. the role and the significance of each of them within the City of Belgrade. The differences have especially been expressed between the urban and suburban municipalities.

If we analyse the structures of areas, i.e. the shares of agricultural and forest land which is reducing as the consequence of the process of conversion into building land, we may notice that its scope increases as moving away from the central part of Belgrade.

The absence of agricultural and forest areas in the municipalities of Stari Grad, Vračar and Savski Venac testifies that the transformation process of this area is completed, i.e. it has clearly urban character. Other municipalities, particularly those which include the rural settlements, contain considerable proportion of agricultural and forest areas which are less prevailing in the urban municipalities than in the suburban ones (Table 50).

### 17.3. Spatial-functional changes in the settlements of the administrative area of Belgrade

The results of the transfer of active agrarian population into non agrarian activities and a whole series of changes caused by the transfer, first of all in the socio-economic structure of the population and agrarian-geographical landscape, have been used as reliable indicators not only for determining the spatial functional relationships and connections, but also for defining the functional types of the settlements. On the basis of those results the conclusions can be made on the role of some settlements in the functional organisation of the area of the City of Belgrade, i.e. its administrative area.

In the examined period, the presence of the process of the functional diversification of the settlements in the Belgrade area has been noticed, the character and flows of which were determined by the intensity of deagrarianization processes, expressed through the reduction of exclusively agrarian settlements on the account of the increasing number of those settlements which belong to other functional types, particularly the servicing one.

Table 51: Change of the number of settlements of the City of Belgrade according to the functional type.

	1971	2002
Agrarian	92	8
Agrarian-industrial	13	14
Agrarian-service	24	23
Industrial	0	18
Industrial-agrarian	5	8
Industrial-servicing	7	16
Servicing	13	35
Service-agrarian	4	17
Servicing-industrial	6	25

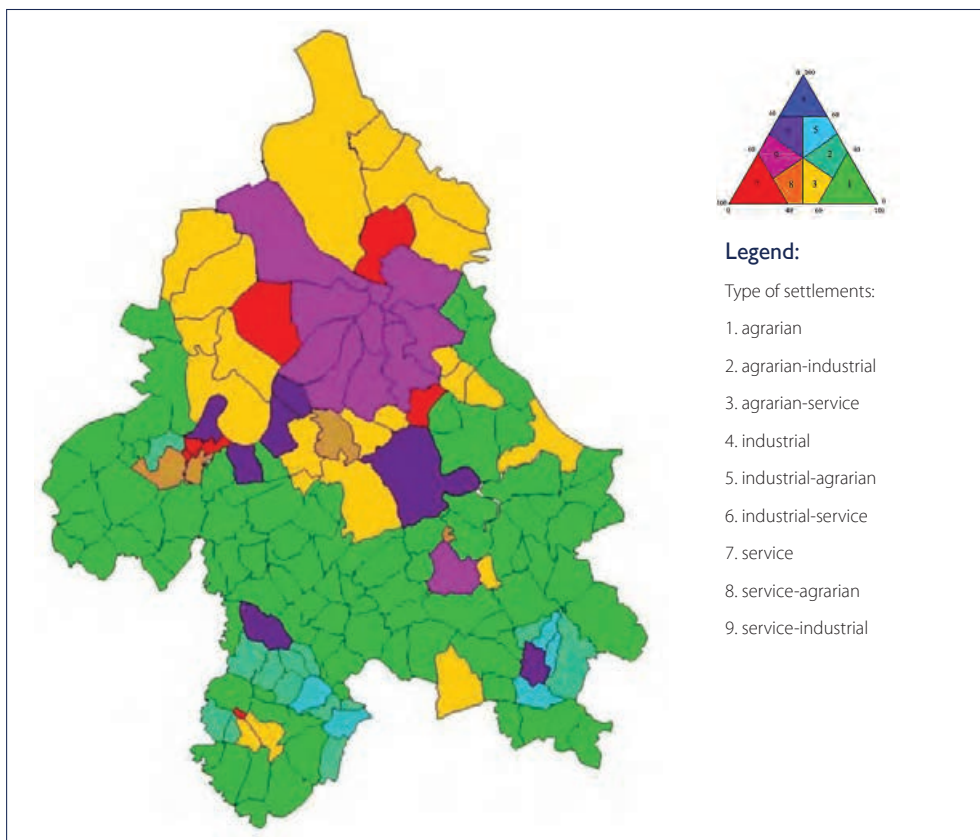


According to the model of the settlement distribution by proportional share in the activity sector<sup>75</sup>, by the 1971 census, the greatest number of the settlements of the observed area belongs to the agrarian functional type (92). That is especially emphasized in the suburban municipalities where, except the municipal centre with a small number of edge settlements, all other settlements are agrarian (Table 51).

According to the 1971 census, all urban municipalities, consisting of one part of the settlement such as Stari Grad, Savski Venac, Vračar, Zvezdara, New Belgrade, Rakovica, are classified into the functional type and marked as servicing, which means that they have at least 60% of the employed in the tertiary sector of activities.

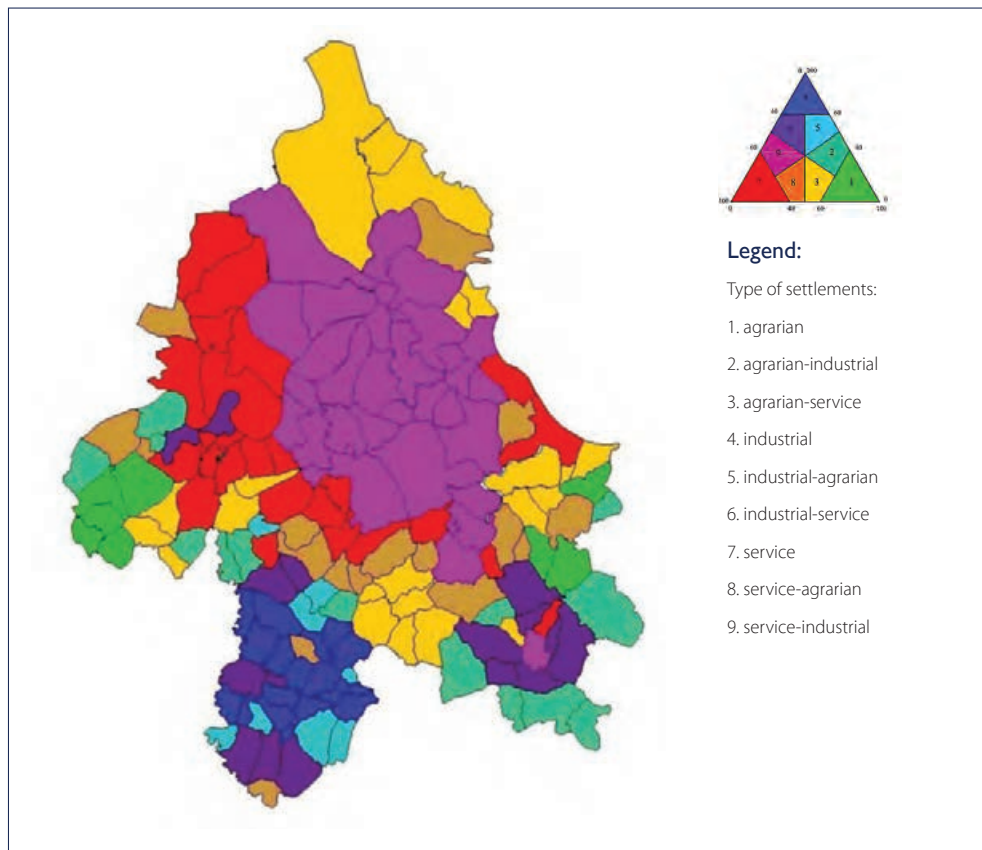
The urban parts of the municipalities of Palilula, Vozdovac, Čukarica and Zemun, are also in the category of the servicing settlements, while the process of the functional transformation is intensively present in other settlements, i.e. the increase in the share of the employed in the secondary and particularly the tertiary-quaternary sector, on the account of reducing the number of employed in agriculture. These are mostly agrarian-servicing settlements.

Figure 61: Functional type of settlements of the City of Belgrade (1971).



<sup>75</sup> More detailed on the model see in: Tošić, 1999. Spatial-functional relationships and connections in the nodal region of Užice; Doctoral dissertation, Faculty of Geography, University of Belgrade, Belgrade.

Figure 62: Functional type of settlements of the City of Belgrade (2002).



In the conditions of the insufficient development of the functions of labour in the municipal centres, the rural settlements of many suburban municipalities belong to the functional type of the agrarian settlements. The emigration of the rural working age population also contributed to it, so that by their employment the population decreased in village, but the structure of the activity has not changed much.

With the development of the functions of labour in the municipal centres and a smaller number of edge settlements, the migration process becomes active towards the centres, while the daily migration of workers gradually strengthens. By the transfer of a part of the employable contingent in the secondary and tertiary-quaternary activity sectors, the process of the functional diversification of village has began, expressed through the reduction in the share of clearly agrarian settlements and the increase in the share of agrarian-industrial and industrial-servicing settlements in the total number of settlements (Figures 61 and 62).

By the 2002 census, the significant decrease is established in the number of the agrarian settlements (from 92 to 8) on the account of one of the following categories (Table 51). The tertiary-quaternary activities, i.e. the number of employed in the sector of services, were at the peak in the last inter-census period. The central parts of all urban municipali-

ties are in the category of completely servicing settlements, except New Belgrade which is in the group of servicing-industrial.

The centres of suburban municipalities of Barajevo and Sopot, have more than 60% of employed in the tertiary-quaternary sector, while the presence of the mining-industrial complex of Kolubara on the territory of the Lazarevac municipality caused that this urban settlement and many others belong to the industrial category with more than 60% of employed in the secondary sector. The activities of coal and power productions have an influence on the territory of the municipality of Obrenovac, the urban settlement of which has the servicing-industrial characteristics. Other settlements of the suburban municipalities are with a lower degree of the functionality, but the process of the socio-economic transformation can be clearly noticed in them.

## 17.4. Intensity and spreading directions of the process of urbanisation in the territory of administrative area of Belgrade

In the process of the socio-economic transformation of the territory of the City of Belgrade, based on the spatial and social mobility of the population, the changes of different phases of urbanisation are manifested by the demographic, physiognomic and functional changes of the rural and urban settlements. Within the observed territory, some spatial wholes differ in the forms and degrees of urbanisation which is caused above all by the transitional phase of the urban settlement development (Tošić D., 1999).

It is difficult to determine the degree of urbanisation without adequate indicators, i.e. the urban way of life in the socio-economic, technological, cultural and other aspects, while it is even more difficult to express them qualitatively. The degree of urbanisation can be defined if these parameters are followed:

- share of active agricultural population in total active population;
- share of households without agricultural farm in total number of households in some settlements;
- share of contingent of employed in active population that is doing its profession.

On the basis of these parameters, five groups of the settlements are distinguished: urban, more urbanised, less urbanised, settlements on the threshold of urbanisation and rural<sup>76</sup>.

According to the 1971 census, the results of the applied model on the territory of the City of Belgrade show the clear differentiation of the central city core. Also, there is a belt of a lower urbanisation degree characteristic for other settlements of the urban municipalities in accordance with the presence of agricultural areas, i.e. the development of the economic structure. Considerably lower urbanisation degree is the characteristic of the settlements which belong to the suburban municipalities. The mapping of the obtained results showed a vast area of the rural settlements within which there are enclaves of the higher degree of urbanisation (Figures 63 and 64).

<sup>76</sup> More detailed on the model see in: Tošić, 1999. Spatial-functional relationships and connections in the nodal region of Užice, Doctoral dissertation, Faculty of Geography, University of Belgrade, Belgrade.

Owing to the concentration of functions and population, the effect of the municipal centres of the suburban municipalities is a little more expressive. Therefore, Mladenovac, Lazarevac and Obrenovac influence the socio-economic, functional and morphological settlement transformation of the inner and outer surroundings. Their sphere of influence is mainly formed within the municipal borders. The positive socio-economic transformation, expressed through the expansion of urbanity from the urban settlement, is the most obvious in the edge settlements to which the intensive daily migration of labour is being developed. Some parts gradually grow together morphologically with the city and they receive the characteristics of the urban-rural continuum.

Figure 63: Degree of the urbanization of the settlements of the City of Belgrade (1971).

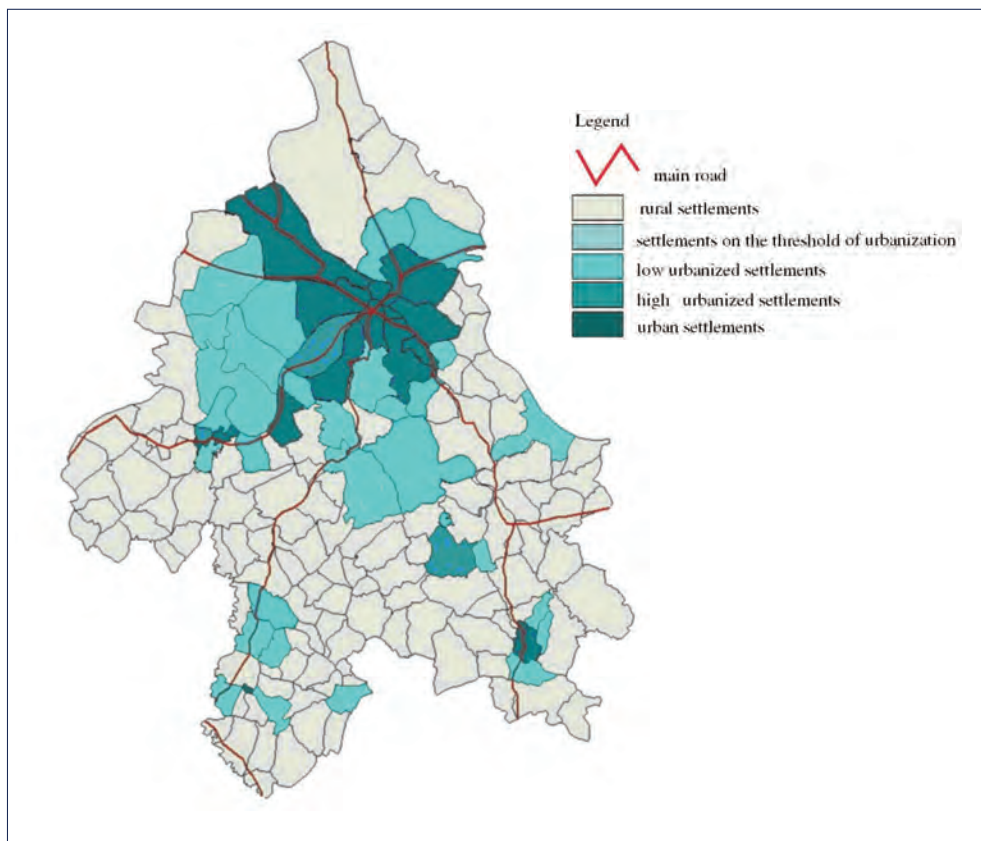
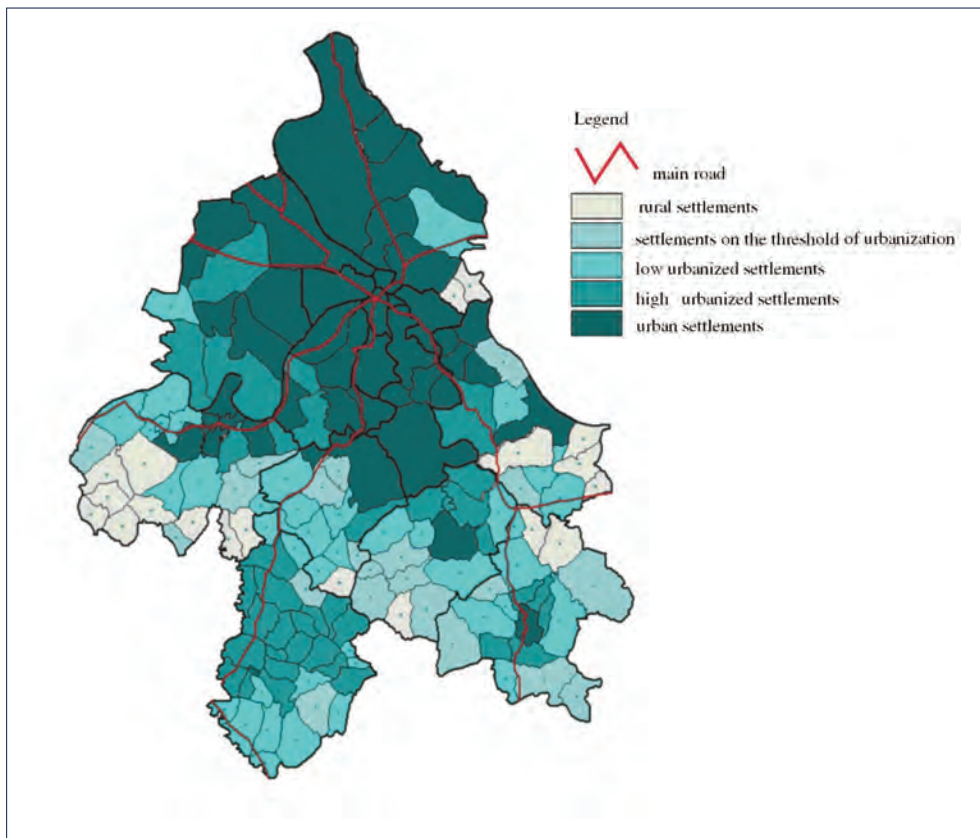


Figure 64: Degree of the urbanization of the settlements of the City of Belgrade (2002).



In 2002 the most urbanised zone of the central city core is still considerably distinguished (considerably expanded in relation to 1971), its direct surroundings is less urbanised and the urbanisation degree of the suburban municipalities is considerably lower (except the municipal centres and edged settlements).

On the basis of the applied model, 45 urban settlements are identified, which is for 31 settlements more in relation to 1971 (Table 52). The greatest number of these settlements belongs to some of the urban Belgrade municipalities (only 8 settlements of this area do not bear an attribute of the most urbanised).

The evident spreading of the process of urbanisation in the settlements of the suburban municipalities, as the consequence of the strengthening of their municipal centres on one side and the influence of Belgrade on the other, have resulted in decreasing number of the rural settlements for even 98 in the observed period.

Table 52: Change in number of settlements of administrative area of Belgrade according to categories of urbanisation.

Degree of urbanisation	1971.	2002.
Urban	14	45
More urbanised	3	38
Less urbanised	10	41
On threshold of urbanisation	20	21
Rural	117	19

## 17.5. Synthetic evaluation of the spatial-functional changes of the administrative area of Belgrade

Generally, the area of the City of Belgrade can be divided into three wholes where each of them has different characteristics. The first includes inner city core-ten municipalities (or their parts) which make the Belgrade settlement; the second one is associated to the suburban area which includes 20 surrounding settlements of Belgrade; and the third one relates to the suburban area, i.e. to seven municipalities out of the territory of the inner city and suburban part.

**The Belgrade settlement**, with about 1.120.000 inhabitants, is characterised by the population stagnation in many municipalities, insignificant population increase in the municipalities of Čukarica and New Belgrade, but also by the permanent depopulation in the central part of the city (the municipalities of Stari Grad, Vračar, Savski Venac). The city core has the characteristics of a long-range stable and developed functional structure with the insignificant share of the active population in the primary sector, and the dominant share in the servicing sector in relation to the productive sector of the activities. Over 85.000 daily migrants (workers and pupils) commute to the Belgrade settlement, which make about 5.4 % of the population of the whole City of Belgrade (Stamenković S., Gatarić D. 2008).

The public service facilities in Belgrade are of the republic significance, while the diversification of the functions is expressed most. The morphological changes of the Belgrade settlement have developed in accordance with the new approach of city planning-the internal construction of the city within the frames of building land, but, unfortunately, with more expressive elements of unplanned and illegal construction both in the central and elite parts of the city (Senjak and Dedinje).

**The settlements of the suburban area**, which belong to the municipalities of Zemun, Vozdovac, Palilula and Čukarica, have similar characteristics-the strong influence that the capital and the largest city has on them, but the characteristics and the ways are completely or to a certain degree differently demonstrated in the surrounding area. About 115.000 people live in 20 settlements, over 5000 inhabitants per settlement on the average. The population number in these settlements is very unequal and ranges from 250 to over 17.000 (Sremčica) or even over 30.000 inhabitants (Borča). This belt comprises almost 76 % of the area and about 27 % of the population of Belgrade (the territory of 10 municipalities). Averagely, the population in the settlements stagnates ( $IR = 101.1$ ), the more expressive growth only Borča has (the settlement at the left bank of the Danube which, out of the former rural Banat settlement, grew into the largest urban settlement).

In the last 10 year-long period, the depopulation has also been more and more expressive in the settlements of the suburban belt, influenced mainly by the significant decline in birth-rate which was far lower in relation to the population growth (also including the refugees from the former Yugoslav republics who often settled this area).

Strong polarisation impact of Belgrade on suburban settlements is characterised by a large number of non agrarian and mixed settlements (65 %), especially in the part of Šumadija, less in the parts of Srem, while least in the settlements of Banat (Stojkov B., Tošić B. 2003). The process of deagrarization is weak or temperate in most of the settlements, because the more intensive flows of the population redistribution towards the servicing or productive activities were finished in the 1980s.

The number of the public services and communal facilities depends on the area where the settlements are located. In Srem, the number is characteristic to all large rural settlements, while in Šumadija, and particularly in the settlements of the part of Banat, there is a lack in the infrastructure facilities, especially the public service facilities (education and health).

According to their functional organisation, these settlements have different character. Some of them are the housing suburbs, separately formed settlements, originated in the core of old rural areas of the former Belgrade periphery. Other ones are mainly weekend settlements, while the third have already been formed as housing-industrial settlements or they have still been forming. Finally, the settlements of the Banat, Srem or the Danube parts are of the primary or a higher level functions- processing of agricultural products (Agricultural Plant in Padinska Skela, Borča). Generally, the greatest number of the settlements of the urban-rural belt is in the function of the production and services of the inner city area, so they are characterised by high share of the employed population in non agrarian activities and stable daily migration of workers.

The illegal construction is almost characteristic for all settlements of the edged belt and it is especially expressed in the settlements of Banat, in the direction of Zrenjanin and in Srem, as well as in the suburban settlements of Šumadija where there is also an enormous weekend construction.

Above the fact that the suburban belt of Belgrade represents the area 'attacked' by the illegal construction, it does not have clear economic orientation, it has inappropriate communal facilities (particularly the part of Banat), inadequate public service facilities and a high degree of the spontaneous development, so that it needs the city planners' engagements.

**Seven suburban municipalities** (Barajevo, Grocka, Lazarevac, Mladenovac, Obrenovac, Sopot and Surčin) are the third whole of the Belgrade administrative area. They are under the strong influence of Belgrade on one side, while on the other side they represent independent areas in which the development of the settlements is based on the resources of the local or broader regional and state significance.

The population number, the number of settlements and density of their network are unequal in some municipalities. The average population in the settlements out of the municipal centres is 1000 to 2000 inhabitants (except in the municipality of Grocka, where some of the settlements are much larger). Averagely, due to the domination of

the municipal centres, the population number in all municipalities mainly stagnates, although almost 70 % of the settlements are in the process of depopulation. The increase or the stagnation of the population have only been in the municipal centres, the larger settlements, the better located settlements (along important lines of communication) or the surrounding settlements of larger municipal centres, but even there the population increase has considerably reduced in the last period.

The structure of the active population is diversified in the settlements and its peak is in the municipality of Lazarevac. The process of very intensive deagrarianization up to the 1990s brought to the formation of the large number of non agrarian settlements, over 62 %. The active population, registered according to place of residence, makes a large number of daily migrants: productive or servicing sector of Belgrade (the municipalities of Surčin, Brajevo and Sopot), servicing sector of Belgrade (workers of larger non agrarian settlements of the northern part of the Grocka municipality) mining and power on the territory of the same municipality (all the settlements of the municipality of Lazarevac), or on the territory of the same or another municipality (workers of the non agrarian settlements of the Obrenovac municipality), i.e.-daily migrants who are mainly employed in the same or other settlements on the territory of the municipality (the settlements of the Mladenovac municipality). The lignite exploitation in the middle part of the Lazarevac municipality, about 50 km southwest from Belgrade, was the cause of disappearing and displacing the population of some settlements.

The number of the public service and infrastructure facilities is, generally, on the level of the average of the corresponding number in the settlements of central Serbia, or it is slightly below this average to which the closeness of Belgrade influenced. The economic structure in the centres of 7 municipalities is below the polarisation threshold of the surrounding settlements' development, while the illusory diversified economic structure of the population has only been the consequence of the high proportion of daily migrants towards Belgrade or towards the mining-power complex.

The major characteristic of seven observed municipalities is the largest number of the dispersed settlements (except in the Srem municipality of Surčin), even in the plains and on the gentle slope terrains. Only the parts of the settlements which 'descend' to the highway and regional lines of communication are of the straight, compact type, i.e. shaped or semi compact (the municipality of Grocka). A great number of the weekend projects 'flooded' not only the settlements, but the whole inter-settlement area, especially in the part of Šumadija-in the municipality of Sopot (southern part), in the municipality of Mladenovac (western part), in the Danube settlements of the Grocka municipality, in the southern settlements of the municipality of Barajevo, etc.

Together with the weekend projects, built illegally mainly, the whole area has been surrounded by massive illegal housing construction. This way of the construction is most expressive in the municipality of Grocka (estimation of about 25.000 to 30.000 projects), in the municipality of Lazarevac (in suburban settlements and settlements at the Ibar highway); in the municipality of Barajevo (in broader area of the municipal centre and along the Ibar highway); in the municipality of Mladenovac (in suburban settlements) and in the municipality of Obrenovac (northeast and south from the city core).

The common characteristic of the whole area is the non existence of the borders among the settlements; it is the area which is built continuously, on the land extremely occu-



pied by illegal and unplanned projects for the permanent, but more often for periodical residence.

## 17.6. Problem of constituting the metropolitan area - the functional region

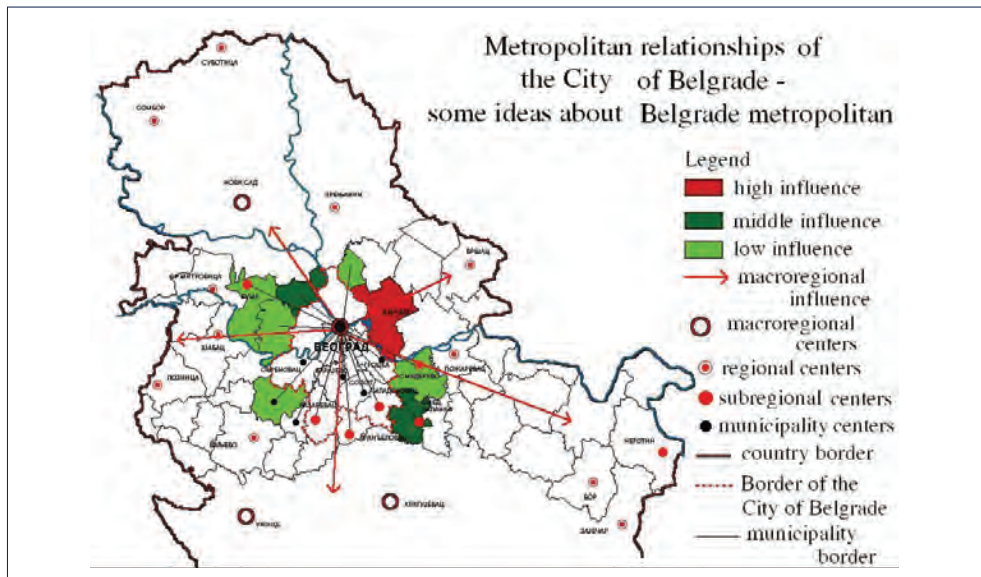
The status of Belgrade as the independent settlement or the centre of the administrative area, i.e. the City of Belgrade is clear because it is territorially defined. Unclearness, however, occurs concerning the metropolitan area of Belgrade because that area has not been defined either in theory or in practice. The model of the metropolitan area of Belgrade represents the central position of the metropolis in the gravitation area. Belgrade in its administrative area, which was formed in 1970s, has the peripheral position due to the forced limitation in the development of the administrative area by the creation of the Autonomous Province of Vojvodina. The administrative area of Belgrade is certainly smaller than the area which could be considered as the metropolitan, especially concerning the parts of Srem and Banat and also the link with the areas in the Velika Morava and Kolubara valleys (Tošić B. et al. 2004). If the border of the gravitation area was proportional to the demographic, economic and functional strength of the city, then some municipalities of Banat and Srem would rather be in the Belgrade area than in Vojvodina. The administrative border of Vojvodina was the obstacle in the functional expansion of the administrative area of Belgrade and it became as greater as the legal constitution of the provinces was firmer (Bojović B., Borovnica N. 1998). Since Belgrade could not form its functional region by its administrative area, first of all because their borders are not arranged, consequently, it did not affirm its metropolitan area.

Since there have not been more serious researches in regard of defining the Belgrade metropolitan<sup>77</sup>, certain attempts were made in the last Regional Spatial Plan of the administrative area of Belgrade from 2004. Namely, the metropolitan of the city is defined, but for which it can be said conditionally that it represents its functional area. Therefore, 7 border municipalities of the Belgrade administrative area and the municipality of Ruma in Srem have been distinguished. The municipalities are divided into three categories according to the strength of the influence. The municipality of Pančevo is in the zone of the strongest influence, the municipalities of Stara Pazova and Smederevska Palanka belong to the zone of the middle influence, while the municipalities of Smederevo, Pećinci, Oponovo and Ub (Figure 65) are in the zone of the weaker influence. It is mentioned in the same document that the borders of the functional area of Belgrade mainly coincide with the borders of its natural region.

The basic task is to carry out complexly the model of the territorial organisation of the Belgrade metropolitan which would enable the more qualitative sustainable development not only of this area but of the Republic of Serbia as a whole. The main principle, on which such model is based, is the simultaneous application of decentralised concentration which also means the regionalisation and local autonomy.

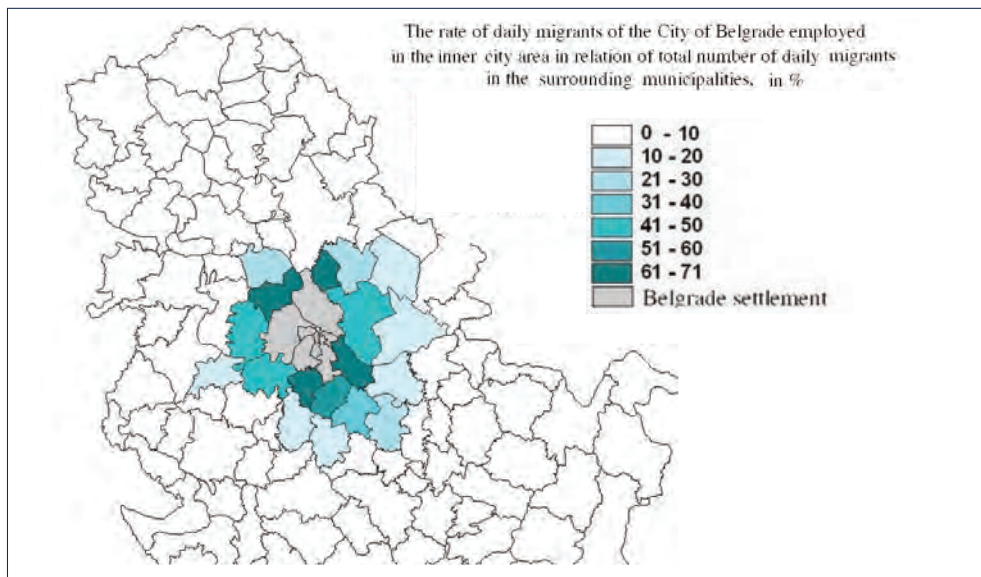
<sup>77</sup> The basis of such researches can be the results of the analysis of daily migrants of Belgrade: Stamenković, Gatarić 2008. Some Spatial Demographic Aspects of Daily Interaction of Belgrade and Surroundings Herald of SGS, vol. 88, no.2, Belgrade (p. 45-50). Over 120.000 migrant workers and pupils commute daily from almost 1200 settlements which is nine times more than the number of divergent daily migrants of Belgrade. Over two-thirds of the convergent daily migrants commute from the territory of the AA of Belgrade. Certain gravitational influences, according to this index, even exceed the borders of the mother country.

Figure 65: Belgrade metropolitan area in the Regional Spatial Plan of the City of Belgrade.



Beside results presented in The Spatial Plan of the City of Belgrade, there are other criteria that show possible Belgrade metropolitan area. The rate of daily immigrants is one of the best indicators for defining functional urban area, or metropolitan area of the Belgrade. All these dates also show that this territory should be much wider than the Belgrade administrative area. A few municipalities included in the City of Belgrade, and also some municipalities in its surrounding have more than a half immigrants, mostly employed workers, who every day go to Belgrade inner city area (Figure 66).

Figure 66: Daily migrants to the City of Belgrade and its surroundings (2002).



## 17.7. Conclusion

By the comparison of the obtained results on the analysis of the demographic flows and processes from the territory of the administrative area of Belgrade which is expressed by changes in the demographic capacity of some categories of the settlements with the results on the analysis of the changes in the structure of the active population activities, i.e. the results of the analysis on the degree of urbanisation of the settlements, the analogue can be noticed in the distribution of zones which unite the settlements of the higher functional transformation degree and the zones of the higher urbanisation degree, i.e. higher population density and immigration character and vice versa-the areas which include weakly urbanised or non-urbanised settlements and the settlements of the weaker functional transformation, i.e. the emigrational areas of lower population density.

The main bearer and regulator of the territorial-integration processes on the observed territory is, certainly, the settlement of Belgrade with the co-ordination of other functionally subordinated and complementary municipal centres of the suburban municipalities, the significance of which is far less expressed, but evident in directing the population flows and material goods. Namely, each of the municipal centres represents smaller or larger pole of attraction, concentration and divergence of the spatial-functional relationships and connections, on the intensities, directions and territorial range of which the field of their influence is being established. By expanding the urbanity from the Belgrade core, the surrounding settlements transform, making the suburban ring which gradually approaches and grow together with it spatially. The central business zone, which was formed on the territories of the central municipalities (Stari Grad, Savski Venac and Vračar), dominates the whole Belgrade area in the certain sense and it has also been formed in the New Belgrade municipality in recent years. The argument why the parts of the municipalities of New Belgrade and Zemun still do not represent the parts of the central zone has been based on the fact that they are not continuously leaned, but they are spatially and functionally distant and separate.

Observing the municipal centres of the suburban municipalities and their roles in the changes of the spatial distribution, natural development and socio-economic restructuring of the population, their significance in the development of the economic flows and workforce development, as well as in the socio-economic and functional transformation of other, non urban settlements, it may be concluded that there is a certain hierarchy among them. The municipal centres of Lazarevac, Obrenovac and Mladenovac can be observed in the same hierarchical level. Besides industry which is the basis of their role of the significant pole of the development, these urban settlements also accomplish their role of the suburban centre over the developed structure of other economic and non economic activities, which makes them the most significant centres of labour for the population from many surrounding settlements. Other municipal centres are in the following hierarchical level: Grocka, Sopot, Barajevo and Surčin (as newly formed municipal centre under the strongest influence of Belgrade), in the functional structure of which the tertiary activities are dominating. Their influence on the transformation of the surrounding settlements of the municipality is less and greatly supported by the influence of Belgrade.

The expressive heterogeneity of the observed territory points to the conditional justification of division on urban (also including suburban belt) and suburban part, taking into consideration that these two areas are very different which also have very different categories of the development in their internal borders. The differences are also noted among the urban municipalities, and first of all, that applies to the municipalities which are the part of the Belgrade settlement on the whole in relation to the municipalities which have, in their spatial range, the settlements of considerably lower degree of urbanisation which do not have the urban status.

Summing up the previous analytical findings on the regional development of the City of Belgrade (administrative area of Belgrade), it has to be emphasized that during the last ten years it has been exposed to numerous problems and difficulties, and particularly to negative developmental effects that did not spare any of its territorial parts, i.e. municipalities.