

# 24. Comparative synthesis of the challenges of spatial development of Ljubljana and Belgrade

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Challenges of a development are terminologically characterized by a combination of “senses of difficulty and victory”. They imply the strength and will of the actors in the development process who optimistically look at the existing situation and trends, including the obstacles, and intend to act accordingly. In the comparative review of the challenges of spatial development of Ljubljana and Belgrade we focused on both, taking developmental opportunities and advantages, as well as successful solving of the developmental problems and avoiding the developmental obstacles into account. We did not intend to do a precise quantitative comparison focussing on measurable sets of characteristics of the cities and their wider regions, and developmental strategies and policies used to lead and monitor their spatial development. Such a benchmarking exercise, however tempting, would require quite some additional research work we could not afford to do. In this chapter we therefore relied only on the indicators measuring incentives or obstacles to the spatial development, accompanied by expert opinions, evaluations and eventual planning or policy suggestions provided by the authors in the book.

## 24.1. Strategic positions of the cities

Both cities are characterized by having exceptional physical-geographical, economical-geographical and political-geographical positions. Both have the roles of national capitals, which are related to their various primacies regarding their demographic, educational, economic, employment, scientific, cultural and other characteristics and possibilities. The developmental strategies of both cities count on the importance of their position in the junctions of important European transportation corridors (including navigable rivers in case of Belgrade), and their historical, present and potential incorporation into regional and wider international networks of cities or urban regions.

Until 1990s the development of both cities had been characterized by strengthening of their local, regional (level of republics within the federative Yugoslavia – former Yugoslav Federation), national and partly international roles. In the last decade of 20th century their directions of development dramatically broke up. Ljubljana became the capital of a newly established state that entered EU in 2004, three years later entered the “Schengen Area” and accepted Euro. In that period of time Belgrade lost its strategic position of a strong South-Eastern European capital, and was for nearly two decades excluded from the processes of the European cooperation and integrations. Most part of its economic

power and urban identity was also lost. Its slow recovery after multidimensional crisis is even further postponed due to the world economic crisis.

## 24.2. Physical-geographical factors

Several similarities between the two cities regarding the physical-geographical factors of spatial development can be found. Both are located by two rivers, and by a contact between flat land and somewhat elevated land. The flat lands contain the main resources for cities' drinking water supply, and are considerably consumed by extensive built-up areas resulting from the spatial growth of the cities. Even the areas endangered by the floods and earthquakes are not exempt from the mentioned urbanization process, especially in Ljubljana.

Several physical-geographical characteristics related to the spatial development of Ljubljana may be emphasized. The flat surface of the Ljubljana basin makes the construction of buildings and infrastructure, and also the pedestrian and bicycle traffic easier. The hilly ranges covered with thick forests penetrate into densely populated urban areas, which consequently benefit from local air circulation and possibilities for recreation in the "natural environment". Relatively abundant drinking water resources are available in the wider area of the city. The high level of physical-geographical heterogeneity due to the contact between the plain and the hilly areas, another contact between sub-Alpine and karstic (Dinaric) landscapes, and in a wider surroundings a contact between the plain and the mountains (the Alps on the north, Dinaric mountain Krim on the south) is less obviously related to the spatial development. For example the latter is not a direct factor of spatial development of the city, but intrinsically contributes to Ljubljana's geographic, and also visual and perceptual identity. Among the main physical-geographical obstacles for spatial development of Ljubljana are its location in a tectonic basin, lithological composition, the areas of groundwater and the threats of earthquakes and flooding. The location in Ljubljana basin results in frequently poor ventilation, temperature inversions, fog, increased air pollution, and makes the safety of the traffic and several aspects of the quality of life of the population worse. The basin location is also characterized by tectonic sinking, which is related to the threats of earthquakes, especially on Ljubljansko Barje (marshlands) and majority of other flatlands in the southern part of the city. Marshland additionally aggravates the construction of housing and infrastructure on these areas, and the threats of flooding are high there as well.

Among the physical-geographical characteristics that influenced, and still influence the spatial development of Belgrade, are the position near the confluence of two big rivers, erosion, landslides and torrents on the hilly territory south of the city, lithological composition, threats of flooding and protected areas of groundwater. The mentioned threatened hilly terrains have been intensively built-up, to a large extent illegally, in the last decades. The presence and extensive exploitation of natural resources, especially the lignite, in the vicinity of the city is its special spatial developmental challenge. In comparison with Ljubljana, Belgrade has less problematic situation regarding the earthquake threats, better air circulation and higher amount of insolation. The latter is seen as opportunity for complementary development in the field of energy supply.

## 24.3. The systems of settlements, demogeographic and social geographic characteristics and processes

The population living in the settlement (city) of Ljubljana represents about 13 %, the population of Urban Municipality of Ljubljana about 14 %, and the population of Ljubljana urban region about 25 % of the total population of Slovenia. The population living in urban area of Belgrade (i.e. the settlement of Belgrade, consisting of 10 urban municipalities) represents about 16 % and the population of the administrative area of the City of Belgrade (also referred to as the urban region of Belgrade) about 21 % of the total population of Serbia. In relation to the population of the country Ljubljana and Belgrade are quite comparable. But not in absolute terms: the population of the urban area of Belgrade is more than four times as large as the population of the City of Ljubljana, while the population of the administrative area of the City of Belgrade is nearly six times as big as the population of the Municipality of Ljubljana, and about three times as big as the population of Ljubljana urban region.

Although Ljubljana is one of the smallest capital cities in Europe, and the population in the city declined in the last two decades, it has strengthened its position in the national and international urban systems and networks of urban settlements. While the population has declined in the city since 1990s (the process turned towards slight growth after 2007), it has grown considerably in the wider urban region of Ljubljana, due to processes like suburbanisation, peri-urbanization, ex-urbanization or urban sprawl. However, despite the relative stagnation of the population in the municipality, the housing construction stays far behind the housing demand. Among the results of migrations towards the suburban fringe of Ljubljana are quite evident difference in the age of the population between the city and wider suburban areas (ageing index 135 for Urban Municipality of Ljubljana and 70 for Ljubljana Urban Region), inadequate distribution of public services and employment possibilities regarding the age structure of the population. The area and the population of the daily urban system and urban functional region have grown parallel with the intensified spatial interaction within these areas, especially the commuting to work and education (about 150.000 commuters daily) from the Ljubljana urban region to Ljubljana. The social-economic differences in the population and between the areas of Municipality of Ljubljana or Ljubljana urban region are quite moderate in comparison to the urban areas in other European countries.

As already pointed out, the relative size of Belgrade, compared to Serbian population, seems comparable to the relative size of Ljubljana within Slovenia. But studies of the systems of settlements and centres of Serbia show high level of centralization of population and functions, on national as well as on the level of the urban region of Belgrade. The strategy of polycentric development has been far from successful in Serbia, and resulted in excessive developmental lagging of medium sized regional centres behind the main centre, Belgrade. On the regional level the suburban centres are supposed to strengthen in the future to receive some of the functions of the main centre. Several aspects of demographic processes have been similar to those in Ljubljana, like the stabilization of the population growth in the city in 1980s and 1990s after few decades of steady growth, population decline in the city core and the population increase in suburban areas, and overall ageing of the population of the city (ageing index 103), especially in its core. Main

specificities of demographic processes in Belgrade are the negative natural increase even in the suburban areas and considerable contribution of war refugees to immigration in 1990s. The daily urban system of Belgrade is hardly comparable to the one in Ljubljana, already because of the spatial size difference between the cities. But even taking this aspect of comparison into account, the concentration of the daily migrations (estimated at more than 50% of the resident population) in Urban Municipality of Ljubljana seems considerably higher than in Belgrade. Social-geographical or ethnic-geographical segregation are not perceived as an important problem related to spatial development of the studied cities, although social areas analyses have shown some distinctive instances of segregation.

## 24.4. Economic-geographical, spatial-functional and transport transformations

Both studied cities are by far the strongest economic centres in their countries. In Ljubljana more than 20 % of the active population, 30 % of the total income and gross added value, and more than 40 % of the profit of Slovenia (Bole, 2008) are concentrated. Estimation of the GDP per capita (purchasing power parity method, PPP) for Slovenia is about 88%, for Ljubljana Urban Region about 125 % and for Urban Municipality of Ljubljana between 140 and 175 % of the EU27 average (Ljubljana..., 2010). Calculated on the basis of the data for 2008 (GDP..., 2009) estimations would be 20.680 €, 29.375 € and 32.900 – 41.125 € per capita respectively. Estimations of the GDP per capita (PPP, based on International Monetary Fund, 2010) for Serbia is about 2,7 times smaller than for Slovenia. The majority of the 190.000 working places (Statistični letopis Ljubljane, 2009) are concentrated in trade, public administration, defence, health insurance, construction, education and health care. Among all economic activities the business activities, services and trade occupy the biggest surfaces. Recent economic-geographic processes in Ljubljana are characterized by de-concentration of economic activities which move from densely built-up inner city areas to better accessible, less expensive and more adaptable suburban locations. Parallel to the de-concentration also inner city developments intensified, nearly exclusively based on private investments. Some of these investments, mainly focusing on trade, expensive housing and only rarely on other economic activities, are directed to derelict areas within the city.

Traffic in Ljubljana is characterized by excessive domination of personal car over other modes of transportation within the city (65 % of all the passenger traffic travels), and even more in wider urban region (90 % of all the travels). The public bus passenger traffic system has a minor role within the city, and even smaller in intercity travels in wider urban region. Railway passenger transportation has not been successfully included into daily circulation traffic so far. Bicycle traffic becomes increasingly important, and overtakes the development of relevant infrastructure for cycling and for its better integration into the overall traffic system. Considerable improvements of public passenger transportation and the mentioned cycling infrastructure will be necessary to move the development of the traffic into more sustainable direction.

Similarly as from demogeographic aspect, also in the economy Belgrade represents somewhat higher degree of centralization within Serbia as Ljubljana within Slovenia. In Belgrade there are about 30 % of workplaces, 35 % of GDP, 40 % of population with higher education and 40 % of the employed in service activities of the total figures for Serbia. Parallel to the predomination of tertiary and quaternary economic activities, also a noticeable presence and modernization of industrial and mining activities have been pointed out. Another specificity of Belgrade is its ability to meet the needs of the city population with the agricultural products. The process of economic-geographic de-concentration has resulted in decrease of predomination of the centre of Belgrade and Zemun in several economic activities, especially in trade. New Belgrade is becoming a new business and financial centre, while industrial activities continue to move to urban peripheral locations.

The international traffic role of Belgrade has been reduced to serve mainly the local and regional passenger and goods flows in the last two decades. Reviving this international role is therefore among the important developmental challenges of Belgrade. Among other developmental problems regarding the traffic the excessive concentration of workplaces in the city centre, partial mixing of local and transit traffic, lack of high capacity transportation modes in the main transportation corridors, extreme lack of the parking places, neglected and marginalized river traffic may be pointed out.

## 24.5. Pollution and environmental protection

To follow the principles of sustainable development, the spatial planning and development of Ljubljana will need to focus on the following goals pointed out in the book: to maintain the environmentally appropriate star-shaped urban layout, to balance the density of building and other environmental pressures with denser building along public transport routes, to preserve and increase the self-cleaning capacities, landscape and biotic diversity of urban and rural ecosystems, and to reduce the use of natural resources and the production of various emissions .

Several deficiencies, which can be understood as missed opportunities, but also as future spatial development challenges, have been emphasized regarding the actual situation of the environmental protection and sustainable development in Belgrade. A long list of these deficiencies, presented also in this book, should be an effective motivation for resolute action in spatial planning, governance, as well as in everyday life of the citizens. Let us hope that inclusion of Belgrade into the association of “healthy cities” shows the determination of the city administration “to do something about it”.

## 24.6. Strategic planning and spatial development

Strategic, long-term planning has been a very important way of spatial planning until 1990s in both cities. In the last decade of 20th century both cities have experienced considerable changes in the factors of spatial development. Increasingly important role of private investments and functioning of the real estate market have often led to

considerable deviations from the long-term plans of spatial development, and also from principles of modern urban design and management.

Overviews of the existing strategic spatial planning documents for Ljubljana and Belgrade confirm revitalization of the activities in this field. In Ljubljana its internationalization, and especially its new role of national capital city, can be viewed as trigger for returning of the strategic planning. For Belgrade even more reasons for re-establishing the role of strategic planning can be pointed out. Maybe the most obvious among the reasons are the devastating results of the multidimensional crisis in 1990s, like collective identity crisis, erosion of trust in the institutions, illegal construction in the wider urban region and even in the city core, and so called "kiosk urbanization". However, the world economic crisis may postpone the realization of strategic spatial planning as well as the processes of Serbia's inclusion into the processes of European integrations.

## 24.7. Information and communication technologies, geoinformatics and spatial planning and development

Geoinformatics is included in many ways into the preparation of the strategic and implementation spatial plans in Ljubljana and Belgrade and their urban regions. But it would be misleading to assert that geoinformatics considerably contributes to the quality of the whole spatial planning and development in the studied cities. Except in a few examples, the spatial planning and managing procedures are still predominantly carried out in a very traditional way. The opportunities for modernization of these procedures in the directions of e-governance and e-democracy, offered also by the geoinformation technology, have therefore been used only in a limited way so far.

Among the possibilities for improvements in the use of geoinformatics in the Urban Municipality of Ljubljana, the following can be pointed out: the improvement of the quality of some existing, establishment of some non-existent geoinformation layers (briefly specified in this book) and strengthening of the department of (geo)informatics at the Urban Municipality of Ljubljana. The latter could be related to more innovative use of geoinformatics in the direction of increasingly public-participation-oriented spatial planning and management. Two examples of "good practice" show that in case of Ljubljana it is not the technical equipment, or specific geoinformatic knowledge, which takes the spatial planning towards higher levels of e-governance and e-democracy. The true lever of changes lies in the belief of the municipal or regional government in the positive effects of active participation of the public in the process of spatial planning and development. Of course, the belief should be followed by relevant decision and implementation. The mentioned "good practices" may be a positive sign that the municipal government in Ljubljana decided to take the path towards democratic participatory spatial planning.

The use of geoinformatics in spatial planning and management in Belgrade, and in Serbia in general, experiences several problems, like the fragmentation of the institutions dealing with geoinformatics, lack of cooperation between them, interoperability (???) issues, duplication of activities, geoinformation and geoinformatic applications. The main players in the field of the geoinformatics and the spatial planning and management in Belgrade are pointed out in the book, as well as their activities in the field of bringing the

information from the spatial plan to the public via internet. However, further integration, systematization and harmonization of the use of geoinformatics in the spatial planning in Belgrade are necessary to bring true advancements in this field, and to avoid another example of “expensive but non-successful” implementation of geoinformatics.

## 24.8. Challenges of spatial development: a comparative synthesis

The authors of the chapters in this book have approached the spatial development of Ljubljana and Belgrade from different perspectives. Consequently they have emphasized different developmental problems and opportunities. Among these, some may be recognized as particularly outstanding. They could be named “synthetic challenges” because confrontation with each of them individually solves simultaneously several opportunities or problems of development, while confronting them all together includes majority of the challenges emphasized by the authors of this book. On a more general level, several challenges of development are quite similar for both cities, while when discussed on a more detailed level also the reflections of the differences in spatial development between the cities become more apparent. Among the “synthetic challenges of spatial development” the following may be emphasized:

- search for and realization of adequate economic, demographic and other “developmental contents” in the wider city core;
- solving the accumulated problems of unplanned, in Ljubljana mainly dispersed and in Belgrade mainly illegal continuous forms of urban sprawl towards adjacent or more distant suburban and rural areas;
- confronting the developmental challenges triggered by the ageing of the population of both cities;
- modernization of the system of urban and suburban passenger transportation based on a system of measures leading reliably towards important reduction in the personal passenger traffic by car and consequent substantial increase of the public passenger transportation and cycling;
- reduction or elimination of the negative impacts of previous examples of inadequate spatial development;
- preservation and improvement of the quality of the living environment and wider, also social and economic living circumstances, following the principles of sustainable development;
- assigning more adequate role to the strategical and implementational spatial planning on local and regional level in spatial development of the city and its urban region;
- inclusion of public into different phases of the planning and monitoring of the spatial development of the city, on the way towards democratization of (e-)governance in the cities and urban regions, with adequate support of geoinformatics.

Among specific challenges of spatial development of both cities, focusing on developmental opportunities and advantages, we may emphasize their advantageous strategic traffic and geographic position and strengthening of the regional planning and regional cooperation. In Ljubljana such additional challenges as strengthening the position of the city and urban region within international networks of the centres and regions, taking advantage of favourable characteristics of relief for further development of the cycling as increasingly important mode of the urban traffic, preservation of the star-shaped layout of the city, important from the aspects of the sustainable organization of transport and the quality of living environment of the population, improvements in the quality of surface waters and consequently of the groundwater, more reasonable use of the latter, and the gentrification of the city core may attract readers further attention. Examples of Belgrade's specific challenges are the improvement of the position of the city and urban region within international networks of the centres and regions, opportunities of the solar energy use due to favourable conditions regarding the number of days with sunny weather, inclusion into the European integrations and entering the European Union, and modernization of development of the transport infrastructure, for example the passenger river traffic and the cargo air traffic.

In the second group of specific challenges of spatial development related to successful solving of the developmental problems and avoiding the developmental obstacles in Ljubljana the following may be emphasized: the reduction of the existing natural threats to the existing built-up areas due to the earthquakes or flooding, redirection of further construction activities to less endangered areas, strengthening of the centres in adjacent or more distant functional hinterland of Ljubljana, consequential reduction of urban and suburban daily circulation of the population, improvement of the housing supply regarding the changes in quantity and quality of the housing demand, systematic (supported by media) decrease of negative stereotyping about certain urban and suburban neighbourhoods aiming at local identity improvements. Among examples of such specific challenges in Belgrade we may emphasize the reduction or elimination of the natural threats (mostly as erosion and landslide threats) to the existing, mostly illegally built-up hilly suburban areas, redirecting future housing construction to less endangered areas, reduction of inadequate infrastructure and services on the illegally built-up areas and the development of the mining in the vicinity of the capital city bringing as little as possible of the negative impacts on the spatial development of the city, especially on the traffic, air and water pollution and to the visual appearance of the landscape.

The above overview of the challenges is by no means complete. It is constructed on the basis of the selected problems and opportunities of spatial development of Ljubljana and Belgrade provided by the authors of the chapters in this book. Detailed challenges presented in the book are under a decisive influence of the spatial scale and the research orientations of the authors. The selection of the "synthetic challenges" presented above is a modest attempt to synthesize the comprehensive collection of the collected materials. But the selection of the specific challenges is intended only to present their diversity and breadth, characterized by which they present themselves to the spatial researchers and planners, decision makers, government and finally the population of Ljubljana and Belgrade. The readers of this book should be aware that challenges of spatial development are intrinsically multidimensional, and several instances may be out of the reach of the research focus and knowledge of geographers and spatial planners, and of the



authors of this book. Maybe the readers, especially if coming from other disciplines, will get a feeling that the challenges discussed in this book are very general, broad scale, far from everyday real life situations, and from the problems they may experience in their concrete living environments. We do not deny the importance of other developmental challenges, focusing on other aspects of development, or perceived on a more detailed spatial level. But in the practice of spatial planning and monitoring, on local or higher spatial level, the opposite situation happens just too often: perception and solution of a concrete problem in certain area may overlook the framework of the problem, and its eventual conflict with the long-term spatial development of a wider area.

The authors of this book have decided to prepare it in English language. The aim of such decision has been to make the information on and opinions of the authors about the situation and perspectives of the spatial development and its planning available to international public. Due to financial and time limitations we have not been as successful as we wished considering the quality of the language used in the book. But we believe that the collected texts and other presented materials, including the used and listed references, will serve the reader as a valuable document on spatial development and planning of Ljubljana and Belgrade at the beginning of the 21st century.