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# **PROCEEDINGS**



15-16 June, 2021  
Ohrid, North Macedonia

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## URBAN AREAS OF SERBIA – A NEW FRAMEWORK FOR SPATIAL DEVELOPMENT

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### ABSTRACT

Disproportions in the Serbian urban system, which were accumulated during the decades, manifested in unequal distribution of population, activities, highly qualified labor, accessibility of centers, have become more noticeable during the second decade of the 21st century. Concepts that were used in previous national spatial planning documents based their spatial development on the application of functional areas and functional urban areas without being able to provide balanced development – failing to implement politics of polycentrism. The national urban system of today has an irregular shape with clearly marked domination of the capital in all of the previously stated characteristics. In these circumstances, it is a necessity to seek a new instrument of spatial development that will provide "acceptable territorial imbalance" and prevent creating a further partition between the Belgrade metropolitan area and the rest of the territory. The purpose of this paper is to discuss a new framework of spatial development which is based on urban areas - using them as an instrument to optimize urban system and to contribute to territorial integration.

**Keywords:** urban areas, spatial development, integration, Serbia.

### INTRODUCTION

The role and importance of urban areas in spatial development have been the subject of research of many scientists and research organizations for many years. Dynamic socioeconomic, demographic, and morphological changes that occurred between the city and its surroundings, which were a spatial manifestation of urbanization, industrialization, and deagrarianization, stressed the necessity to seek not only for the role of urban centers in the territorial integration processes but also areas under their influence – urban areas. According to Haisch & Müller [1], these areas are significant hubs of exchange of economic goods, people's circulation, and knowledge, representing the poles of development and initiators of economic and social changes.

The first step in the research of this problem is their definition and delimitation, and then a determination of their role in territorial development based on various parameters. Considering specific processes and their trends represented in Serbian geospace, but also relying on previous research on urban areas the aim of this paper is to point out the need and possibility of applying urban areas as an instrument of spatial development and territorial governing.

## **DELIMITIG URBAN AREAS – PREVIOUS RESEARCH**

Due to the lack of a common unique definition, and bearing in mind that urban areas within national territories are formed in specific social and economic contexts, many countries have developed their own definitions of urban areas and indicators for their delimitation, which often differ substantially [1] [2].

Among the most significant researches that have been conducted and have found their application in spatial development are those conducted by ESPON (European Spatial Planning Observation Network), OECD (Organization for Economic Co-operation and Development), and the UN (United Nations). The research conducted by ESPON within the ESPON 1.4.1 Project [2], based on a functional approach, defines that the urban area consists of the urban core, the inner ring surrounding the core, and the outer ring that forms the outer boundary of the urban area. The OECD study that was developed in collaboration with the European Commission, based on a functional approach, redefined urban area definition by which it presents a functional economic unit which is characterized by a largely populated city and daily commuting zone whose labor market is highly integrated with the surrounding city [3]. The UN defines the border of an urban area according to the degree of economic and social relations with surrounding areas, which are identified based on data on related trade and daily migration [4].

The approaches used for delimitation of urban areas can be divided into three groups: administrative, morphological and functional. One or more of these approaches are used in European countries [2]

The administrative approach for delimitation of urban areas has proved to be inadequate, as it relies on strict administrative divisions and does not take into account the real needs of users of space or spatial structures. The most common parameters used in this approach were the number of inhabitants, administrative role, historical context, or legal decision. This approach was used in those countries which didn't have a formal definition of urban areas (Ireland, Czech Republic, Croatia).

The morphological and functional approaches have proved to be more suitable for delimitation of urban areas because they look at the urban area through a social and economic prism and take into account various indicators of their delimitation. The morphological approach uses indicators like the continuity of built-up area, land use, and even in some cases road density network [6] [7]. Among them, the most common was a combination of population density and number of inhabitants whose thresholds varied in different countries. The functional approach delimitates the urban core based on the number of inhabitants and number of employees. The inner and outer ring are delimited by the number of inhabitants, the number of employees, the share of employees in the total number of employees, migration balance, intensive economic activities, etc. [2] [8] [9].

The first attempt of functional regionalization of Serbia was done in *The Spatial Plan of the Republic of Serbia 1996-2010* [10] which introduced the term functional area. Functional areas had covered the entire territory of the Republic of Serbia, and their boundaries coincided with the administrative borders of the municipalities. Data for daily commuting was not used as indicator of the functional dependence of surrounding settlements from an urban center.

*The Spatial Plan of the Republic of Serbia 2010-2020* [11] introduced the term functional urban areas, according to the European practice of spatial planning, although Serbia is still an insufficiently urbanized country compared to Europe. In this document Data for daily commuting was used as an indicator for functional dependence of surrounding area

from the urban center. The conducted research was not carried out at the level of settlements, functional urban areas did not cover the entire territory of the Republic of Serbia, and their borders were given roughly without being based on precise delimitation. Recent scientific researches that preceded or were conducted after the development of these planning documents emphasize the importance of functional regionalization and use commuting data as an indicator of the functional dependence from the urban center [12] [13].

## **URBAN AREAS OF SERBIA AND THEIR TENDENCIES IN DEVELOPMENT**

The settlement network of the Republic of Serbia represents a set of 6158 settlements, of which 4242 are in the area of Central Serbia, 467 in the area of Autonomous province (AP) of Vojvodina, and 1449 in the area of AP Kosovo and Metohija, among which 193 are urban-type settlements. The settlement network is characterized by heterogeneity and disproportions, manifested by unequal distribution of settlements, population, availability of centers, highly qualified labor, the share of the employed population, with marked concentration of population and activities in urban centers (about 60% of the population lives in urban settlements). Small settlements show domination in the size structure of settlements. In the network of urban centers, there is a disproportion between Belgrade and other centers, in most of the aforementioned characteristics. Only 28 centers in Serbia have a population of more than 30000, while the population greater than 100000 besides Belgrade are having only three centers (Novi Sad, Nis, and Kragujevac). In such an urban system, the absence of cities with more than 200000 inhabitants is noticeable, and the irregular Rank Size Rule indicates the irregular shape of the urban system. Considering the stated disproportions of the urban system, the question arises: to what extent are individual centers with their urban areas able to integrate space and enable "acceptable territorial imbalance"?

Urban areas for this research were delimited using the following model:

- 1) center of the urban area is the center of local self-government unit with a population greater than 30000;
- 2) influence area gathers settlements that are in the 45 minutes isochrone and have more than 33,3% of daily commuters to the center of the urban area.

Based on the above criteria, 28 urban settlements have been distinguished on the territory of the Republic of Serbia, representing the centers of urban areas. They are presented on Figure 1.

The largest urban areas in terms of population are the urban area of Belgrade, the urban area of Novi Sad, the urban area of Nis, and the urban area of Kragujevac.

The functional capacities of urban centers have been significantly reduced, which is reflected in the reduction of space under their direct influence. More than 2700 settlements (without data for Kosovo and Metohija) are not part of any urban area. It is noticeable that most centers of urban areas integrate mostly settlements that administratively belong to them, while only the influential areas of Belgrade, Novi Sad, Nis, and Kragujevac integrate a territory wider than administrative. On the contrary, some important urban centers such as Novi Pazar, Kraljevo, Bor, and Pirot fail to integrate even the settlements of their administrative territory. This statement is further supported by the analysis of the structure of daily commuters. Only Belgrade, Novi Sad, and Nis are destinations for a significant number of daily commuters from the territories of other local self-government units. Kragujevac, Vranje, Pozarevac, and Valjevo also have a certain subregional influence. Urban areas interfere, so some of them have the characteristics of

polycentric and hierarchically structured systems, such as Belgrade with Novi Sad, Pancevo, Smederevo, and Zrenjanin; Novi Sad with Zrenjanin and Sremska Mitrovica; etc. Some polycentric urban areas include monocentric urban areas like for example the urban area of Belgrade includes the urban area of Pancevo, which is a monocentric urban area since the largest number of commuters from this administrative territory migrates to the urban center Pancevo.

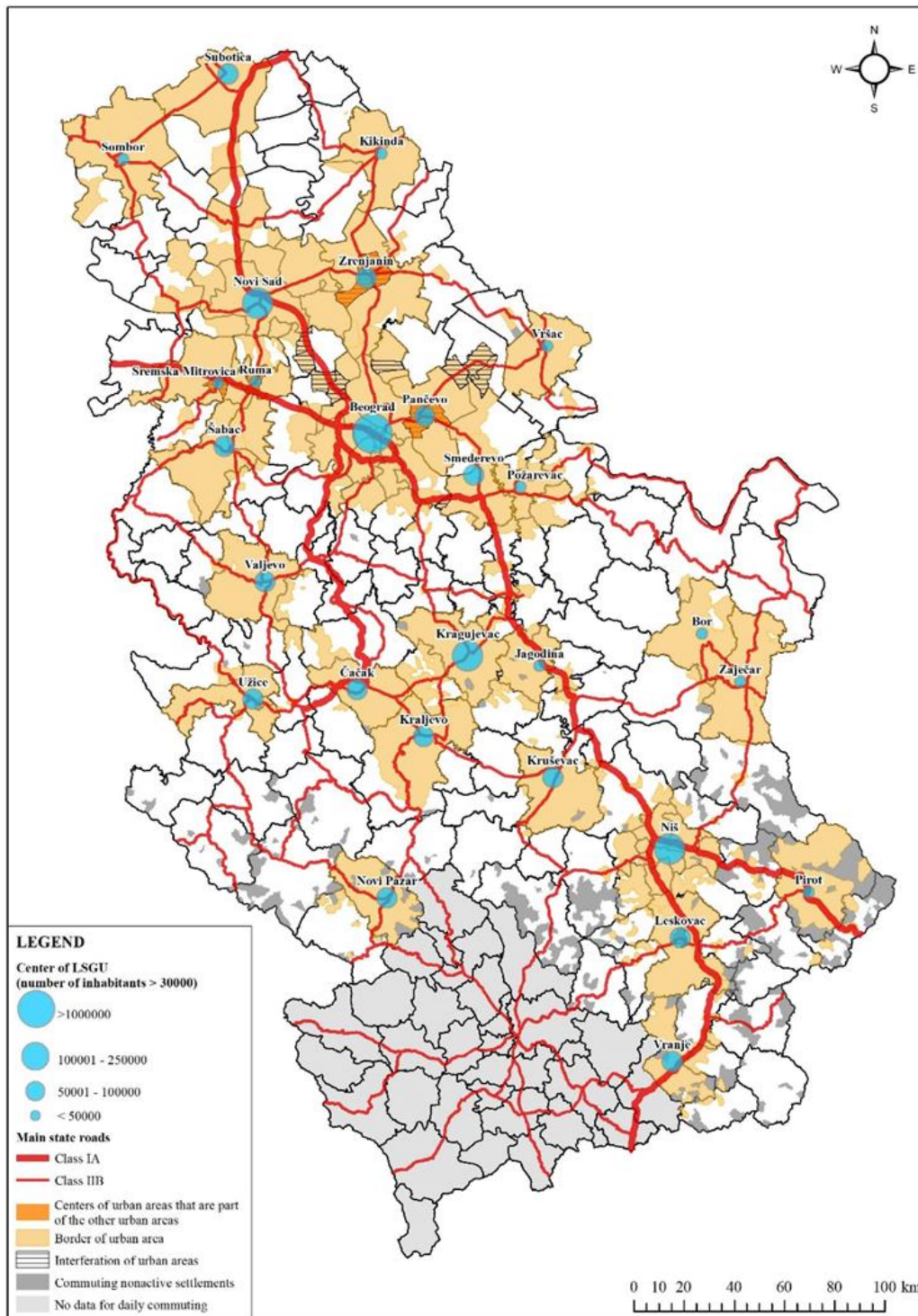


Figure 1. Urban areas of Serbia

## **SPATIAL PLANNING IN URBAN AREAS – INSTRUMENT FOR TERRITORIAL DEVELOPMENT**

From the previously conducted analysis, it can be concluded that a large number of urban centers do not have the power to integrate a wider territory than the administrative, which is a consequence of the weakening of their functional capacities. This situation requires finding an instrument that would prevent further gaps and division between the dominant urban areas and the rest of the territory.

Strategic spatial planning is one of the main mechanisms for governing urban areas [15]. There are numerous examples in the world in which this instrument enables efficient governing of urban areas, whether it was related to the planning of common infrastructure projects in the field of transport, water management, use of resources (land, water), environmental protection, etc.

The approach of planning urban areas must be integrated, and a sectoral approach would produce more negative than positive consequences [15]. One of the representative examples of integrated strategic planning of urban areas is the Regional Plan for Land Use and Transport in Oslo and Akershus, which aims to provide an economically competitive and sustainable region at the European level; efficient land use based on the principles of polycentric development and preservation of green areas; a traffic system that would be efficient, environmentally friendly, accessible to all and which would minimize the use of cars [16].

In Serbian spatial planning practice, when planning the capacity of public services, infrastructure projects, land use, emergency management, the real users of space were not taken into account. Planning has been based on the number of inhabitants, based on administrative borders. This approach has proven to be inadequate and inefficient, because certain centers, due to negative demographic trends, have functional capacities that exceed the needs of users of the space they integrate, as is the case with Kragujevac. On the other hand, certain centers have functions that cannot supply the users of their space, which leads to numerous irrationalities, such as excessive exploitation of resources, overexertion, and frequent non-functioning of infrastructure systems, public services, etc.

## **CONCLUSION**

Disproportions in the development of Serbian geospace manifested in unequal distribution of population, public services, highly qualified labor, accessibility of centers, infrastructural equipment, etc. require a new approach in solving this problem and abandoning rigid frameworks that are marked by administrative divisions. All these problems extend beyond the borders and require the mutual collaboration of local governments in finding solutions.

The fact that more than a half of the settlements in Serbia, according to the model applied in this research, are not integrated into any urban area is alarming. This points out the necessity of considering the approach of spatial planning for urban areas and finding adequate mechanisms for further development. Integral strategic planning based on the collaboration of local self-governments, considering diversification and internal differentiation of urban areas in terms of population size and morphological manifestation, is a topic that needs to be further elaborated and applied in the practice of spatial planning.



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