

CONFERENCE
PROCEEDINGS

**3RD INTERNATIONAL
ACADEMIC CONFERENCE ON
PLACES AND TECHNOLOGIES**

EDITORS
EVA VANIŠTA LAZAREVIĆ
MILENA VUKMIROVIĆ
ALEKSANDRA KRSTIĆ-FURUNDŽIĆ
AND ALEKSANDRA ĐUKIĆ

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Eva VaništaLazarević, Milena Vukmirović, Aleksandra Krstić-Furundžić, Aleksandra Đukić

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PLACES AND TECHNOLOGIES 2016

KEEPING UP WITH TECHNOLOGIES TO CREATE COGNITIVE CITY
BY HIGHLIGHTING ITS SAFETY, SUSTAINABILITY, EFFICIENCY,
IMAGEABILITY AND LIVEABILITY

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HOW TO UNDERSTAND THE GLOBAL PHENOMENON OF URBAN SHRINKAGE AT LOCAL LEVEL? COMPARISON OF URBAN AREAS IN ROMANIA AND SERBIA

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ABSTRACT

As a global phenomenon, urban shrinkage is explained in the scientific literature through general characteristics, such as the economic and demographic decline of a city. Apart from these, it has also strong national, regional and local features. In most cases the particular aspects of each context are the main determinants for shrinkage. The aim of this paper is to determine how to understand the phenomenon at national level through a comparison of Romania and Serbia, both two post-socialist countries that share similarities and distinctions. The first step is to present the situation in each of these two countries; afterwards the same indicators will be used for comparison and conclusions. The result of the paper will be the overview of the urban shrinkage situation in both Romania and Serbia. Finally, some further recommendations are presented, such as the possibility to form a regional approach to the phenomenon.

Keywords: Urban shrinkage, Global-Local, Post-socialist transition, Serbia, Romania

INTRODUCTION

Urban shrinkage can be seen as a global phenomenon on account of its occurrence in many parts of the World (Martinez-Fernandez et al, 2012; Wiechmann and Pallagst, 2012; Hasse et al, 2014). In order to clarify this position, some common characteristics are identified as key elements for the description of shrinking cities all over the world (such as economic and demographic decline of a city (Pallagst, 2008).

Nevertheless, the phenomenon of urban shrinkage also has strong national, regional and local features. Therefore, in this case, one of the most important questions is how to adapt the general knowledge of urban shrinkage to the mentioned levels. It is a greater task to compare different entities at these levels (Wiechmann and Pallagst, 2012). Despite this, it certainly is an adequate

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approach that needs further attention. The results of such an approach could positively contribute to the study of the entire phenomenon.

This is the main reason why this paper's topic is the comparison of shrinking cities at national level. The aim of the paper is to understand urban shrinkage at national level through local adaptations and the comparison of similar cases. European countries are especially noticeable by the presence of urban shrinkage - 42% of European cities are shrinking (Hasse, Athanasopoulou and Rink, 2013). Hence, Romania and Serbia are chosen for the analysis. These post-socialist countries are "notorious" for the widespread appearance of urban shrinkage (Wiechmann and Pallagst, 2012; Hasse et al, 2013; Strykiewicz, T. et al, 2014), due to the similar historic development and patterns of urbanization that overcome a sizable rate of national specificities.

However, a customization in each case is inevitable for such analysis. This is related to the issues in indicator measuring by the mentioned key characteristics. Therefore, the first step is the presentation of urban shrinkage in both countries in brief. Then, local adaptations will be applied to enable a qualitative analysis of the cases by uniform units, indicators and limits. The results of this comparison will be an overview of the urban shrinkage situation in both Romania and Serbia. Finally, some further insights are presented, such as the possibility to form a regional approach to the phenomenon, are also expected. This regional approach will be formed as a cognitive construct, based on experiences of the past, which will be used to understand said experiences and to respond to the future urban development of analysed cities (Mostashari et al, 2011).

THE DEFINITION OF FUNCTIONAL URBAN AREAS (FUA)

Before the explanation of basic patterns of urbanization, it is important to understand how to appropriately define an urban area for both analysed cases. Thus, it is crucial to stress differences between the terms of city, town², and urban settlement in both Romania and Serbia.

The official definition of town/city in Romania is stated in the Law 351/2001, listing 5 classes of settlements. According to the 2011 Census, there are 320 urban settlements, according to the 2011 Census, out of which 104 have the status of municipality. 29 of the urban settlements do not reach the decisive limit of 5000 inhabitants, but their presence in the uniform national territorial polycentric configuration qualifies them for a town.

In Serbia, the most relevant division in this issue is between the definition of city and urban settlement. Official statistics in Serbia recognizes *urban* and *other settlements*, divided in such manner by administrative acts (RZS, 2011). There were 167 urban settlements in the last Census in 2011. Many of these settlements are very small³, thereby they do not have a characteristic urban structure. Further, the official term for city also has some deficiencies. It is strictly a legislative term, close to the meaning of municipality⁴ (NARS, 2007). Stating only that they usually are very spacious, low densely populated and with many rural settlements (Vasiljević, 2008), official cities in Serbia are also not fully adequate for the research of urbanization patterns.

In Romania, the debate is open regarding the FUAs accepted in the National Strategy for Territorial Development, as the OECD list of urban areas by country does not include Romania. The expertise report for the FUAs lists 65 municipalities and 2 towns, most of them presented in ESPON 2014 FUA map. Our reference is the work of Bănică and Muntele, 2013 (Figure 1), because it details every urban area and its hinterland based on the OECD methodology. In Serbia, FUAs are figured in the analytical maps for the Spatial Plan for the Republic of Serbia (Figure 2).

² Linguistically speaking, there is no difference between city and town in Serbian or in Romanian language.

³ For example, Kuršumlijska banja had 106 inhabitants in 2011.

⁴ Actually, former bigger and more important municipalities in Serbia were officially "transferred" in cities by the act of territorial organization in 2007.

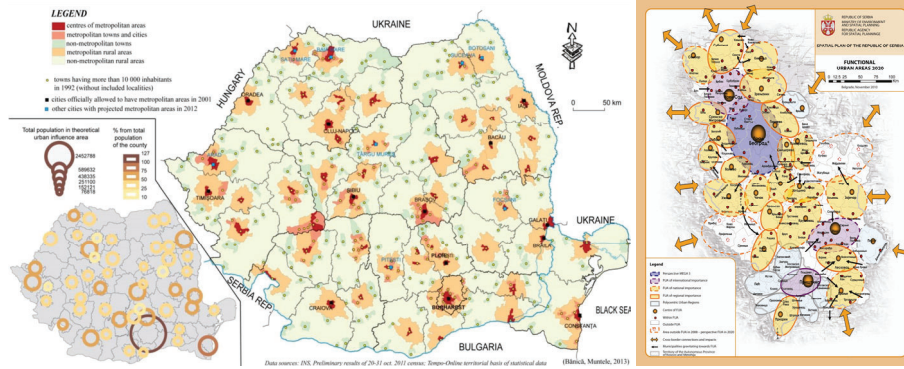


Figure 1: Functional urban areas and their hinterland in Romania (source: Bănică, Alexandru and Muntele, Ionel, <http://goo.gl/dpCj4P>, retrieved January 3, 2016)

Figure 2: Functional urban areas in Serbia (source: Republic Agency for Spatial Planning of the Republic of Serbia - <http://www.rapp.gov.rs/en-GB/content/cid310/spatial-plan-for-the-republic-of-serbia>)

CUSTOMIZATION OF THE CONCEPT OF SHRINKING CITIES

It is stated at the beginning of the paper that key characteristics describing urban shrinkage globally are negative economic and demographic tendencies. Nevertheless, their implementation in specific cases needs appropriate customization. First of all, it is important to find suitable criteria by which both characteristics can be analysed locally. This is the major requirement in order to scientifically identify shrinking cities at the national level of Romania and Serbia.

Demographics-related criteria had been easier to determine, because of precisely defined research unit. It is the ratio of population *growth/decline* per city, occurred between two last national censuses. The control figure is the average decline at national level. This value is 92.81% for Romania and 95.85% for Serbia.

The economic criteria require more deliberation, because particular features prove to be different between Romania and Serbia. The most challenging aspect is how to compare national economic indicators, which are for each country. Furthermore, the importance of "heritage" from socialist period has played significant role in economic valuation. For example, former Yugoslavia had a relatively good economic situation in the 1980s. Thus, the task to reach this level is not simple. Only one city (Novi Sad in 2007) has achieved the level of economic development in 1989, the last "normal" year in the socialistic Yugoslavia (Politika, 2008). Two other major Serbian cities, Belgrade and Niš, are close to cross it. In the Romania's case, the situation is different. Overall economic performance is much better for Romanian cities, owing to "low start", i.e. harsh economic conditions in the 1980s (King, 2007). Hence, the economic criteria in the research cannot be simply described as an "economic decline", but rather as "economic difficulties". In accordance to this, the economic criteria had to be both internationally well-known and officially measured for every unit. Therefore, the level of unemployment is chosen as relevant enough in order to deliver a truthful country profile. It is calculated as a ratio between economically active population and unemployed population per analysed territory. The adequate limit is the value of national average in the last census, which was 3.37% for Romania and 22.43% for Serbia.

RESULTS

The results of the analysis are given in both tabular and graphical presentations. The importance of the tabular presentation is to demonstrate analytical process by both criteria. Graphical presentation is significant for the final consideration, owing to its possibility to clearly show spatial distribution of analysis. The map only illustrates the FUAs that present shrinking patterns by both economic and demographic criteria.

Table 1: The shrinkage of functional urban areas in Romania⁵

No	Functional Urban Area	Economic difficulties - The level of unemployment ⁶	Demographic Decline-Growth/decline ratio 2011-2002	No	Functional Urban Area	Economic Difficulties- The level of unemployment	Demographic Decline-Growth/decline ratio 2011-2002
1.	Bucharest	1.50%	100.38%	26.	Satu Mare	1.64%	88.97%
2.	Ploiești	2.32%	90.04%	27.	Baia Mare	2.04%	91.42%
3.	Câmpina	2.97%	84.83%	28.	Bistrița	2.37%	92.16%
4.	Târgoviște	3.30%	87.39%	29.	Iași	1.52%	90.74%
5.	Pitești	1.71%	93.20%	30.	Suceava	1.95%	88.05%
6.	Alexandria	3.39%	89.81%	31.	Botoșani	2.11%	92.24%
7.	Giurgiu	3.11%	88.17%	32.	Roman	2.40%	72.99%
8.	Călărași	4.35%	93.06%	33.	Piatra Neamț	2.70%	81.67%
9.	Slobozia	2.92%	85.12%	34.	Bacău	2.13%	82.23%
10.	Craiova	2.27%	89.06%	35.	Onești	3.42%	76.63%
11.	Drobeta Turnu Severin	5.26%	86.30%	36.	Vaslui	2.80%	78.85%
12.	Târgu Jiu	3.3%	84.25%	37.	Bârlad	1.97%	80.71%
13.	Râmnicu Vâlcea	2.76%	91.11%	38.	Galați	2.19%	83.46%
14.	Slatina	3.18%	89.32%	39.	Focșani	1.47%	78.94%
15.	Timișoara	0.90%	100.57%	40.	Constanța	2.09%	92.33%
16.	Lugoj	2.02%	90.55%	41.	Buzău	1.96%	86.76%
17.	Reșița	2.73%	86.52%	42.	Brăila	1.68%	83.36%
18.	Arad	1.32%	91.66%	43.	Tulcea	2.33%	79.46%
19.	Deva	2.75%	85.55%	44.	Alba Iulia	3.18%	94.25%
20.	Petroșani	3.97%	76.87%	45.	Târgu Mureș	1.76%	89.78%
21.	Cluj Napoca	1.27%	102.08%	46.	Miercurea Ciuc	2.72%	93.02%
22.	Turda	3.41%	81.72%	47.	Sfantu Gheorghe	3.46%	90.00%
23.	Dej	4.58%	86.73%	48.	Brasov	1.86%	90.13%
24.	Oradea	1.31%	95.04%	49.	Sibiu	1.39%	93.59%
25.	Zalau	2.72%	88.78%	50.	Medias	2.64%	87.16%

⁵Bolded fields display the critical patterns for the analysis of urban shrinkage.

⁶ Out of active population of FUA.

Table 2: The shrinkage of functional urban areas in Serbia⁷

No	Functional Urban Area	Economic difficulties - The level of unemployment	Demographic Decline- Growth/decline ratio 2011-2002	No	Functional Urban Area	Economic Difficulties- The level of unemployment	Demographic Decline- Growth/decline ratio 2011-2002
1.	Belgrade	18.60%	104.15%	14.	Pirot	28.99%	90.08%
2.	Čačak	19.40%	96.15%	15.	Požarevac	19.51%	96.45%
3.	Jagodina	26.81%	98.12%	16.	Šabac	18.30%	92.04%
4.	Kikinda	23.22%	87.83%	17.	Smederevo	25.31%	96.65%
5.	Kragujevac	26.95%	99.90%	18.	Sombor	25.11%	88.28%
6.	Kraljevo	23.10%	103.25%	19.	Sremska Mitrovica	22.33%	91.39%
7.	Kruševac	27.19%	96.06%	20.	Subotica	20.63%	93.49%
8.	Leskovac	32.18%	91.04%	21.	Užice	17.52%	93.49%
9.	Loznica	29.90%	90.41%	22.	Valjevo	15.80%	92.38%
10.	Niš	31.54%	101.23%	23.	Vranje	38.68%	95.73%
11.	Novi Pazar	35.01%	109.24%	24.	Zaječar	25.14%	90.13%
12.	Novi Sad	22.28%	103.94%	25.	Zrenjanin	24.98%	90.03%
13.	Pančevo	23.56%	96.68%				

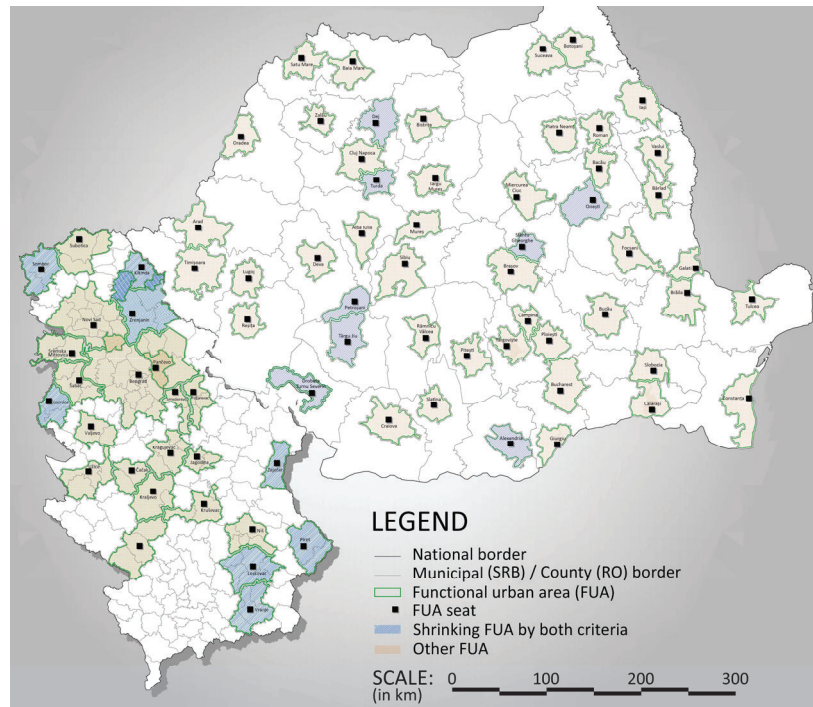


Figure 3: Spatial distribution of urban shrinkage in Romania and Serbia

⁷Bolded fields display the critical patterns for the analysis of urban shrinkage.

DISCUSSION AND CONCLUSION

The presented analysis has proved that urban shrinkage is very observable in Romania and Serbia. Several cities or, more precisely, functional urban areas (FUAs) in both countries are identified as shrinking ones by proposed criteria and limits – 8 (16% of total number) in Romania and also 8 (but 32%) in Serbia. These values are very different. Furthermore, the differences are also very noticeable in analysis by sector. Demographic decline is more connected with Romanian cities, where 82% of FUAs are demographically shrinking⁸. In the case of Serbia, “only” 56% of FUAs are affected by the same process. By contrast, economic performance of Romanian FUAs is much better, because better than national average values are presented in 26% of Romanian cases. Considering Serbia, 64% of FUAs are with more critical values than national average. Furthermore, Romanian FUAs have generally less critical figures for the level of unemployment as the main indicator for economic difficulties.

Analysing spatial distribution of shrinking cities/FUAs at national level it is easy to notice some similar spatial patterns in both countries. For instance, smaller FUAs tend to be prone to urban shrinkage. Oppositely, major cities in both countries have better performance in the analysis. For illustration, Bucharest, Timisoara, and Cluj-Napoca are the only ones in Romania that have grown in numbers during the observed period. Similarly, Belgrade, Novi Sad, and Niš have more positive demographic and economic characteristics than national average.

However, there are even more differences. Shrinking FUAs in Serbia are all at the periphery of the country, as border regions, which is not the case of Romania. According to these urban patterns, it shows that Serbia is more centralized than Romania. On the contrary, the functional role is very important for urban shrinkage in Romania, as a great part of shrinking FUAs are with predominant industrial and mining history. This is less observable in the case of Serbia, although it is still present through the dichotomy of demographically bigger and smaller FUAs⁹.

These similarities and differences in the patterns of urban shrinkage between Romanian and Serbian cities/FUAs prove the statement that shrinking cities have different local and national characteristics and they hereby require special/national approaches in both scientific study and related professional practice. These approaches cannot be completed if cities or urban areas are studied individually, i.e. without relation with context. Thus, the consideration of their spatial distribution in wider context and the analysis of the networks of shrinking cities are inevitable tasks for qualitative identification of their main characteristics/problems and the improvement of their development through the documents of urban and spatial policy. In that way, some indicative, but at the first glance hidden patterns, such as here discovered functional side or the pressure of centralization, can be identified and professionally treated.

With intention to contribute to the formation of a regional approach in cognitive way, several recommendations are presented:

- (1) The profound examination of the past of urbanization in the region is an inevitable task for any future approach, agenda or policy;
- (2) It is very important to clarify which local/regional factors in distant and recent past are important for urban shrinkage. The paper confirms that poor economic performance, usually seen as a key element for urban shrinkage, cannot be implemented in all cases and countries;
- (3) Extensive challenge for any future approach, agenda or policy is also the issue of customization of local/national data, which can be done through the thoughtful understanding of regional environment;

⁸ 9 of the 12 most demographically shrinking FUAs are in the historical provinces of Moldova, although the level of unemployment is below the national level. This situation is explained by the massive migration to the Western countries in the European Union, from Moldova.

⁹ Smaller FUAs in Serbia were the major centres of industry during socialist era.

(4) To cope with this big and widespread problem, such approach needs to be very proactive and to include some contemporary solutions in cognitive way, such as intelligent urban governance, better decision-making process and the use of simulation and modelling.

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