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200-215 **SAMO DROBNE**
ALMA ZAVODNIK LAMOVŠEK

FUNCTIONAL URBAN AREAS
AS INSTRUMENTS OF SPATIAL
DEVELOPMENT POLICY AT THE REGIONAL
LEVEL IN THE CASE OF SLOVENIA

ORIGINAL SCIENTIFIC PAPER
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IZVORNI ZNANSTVENI ČLANAK
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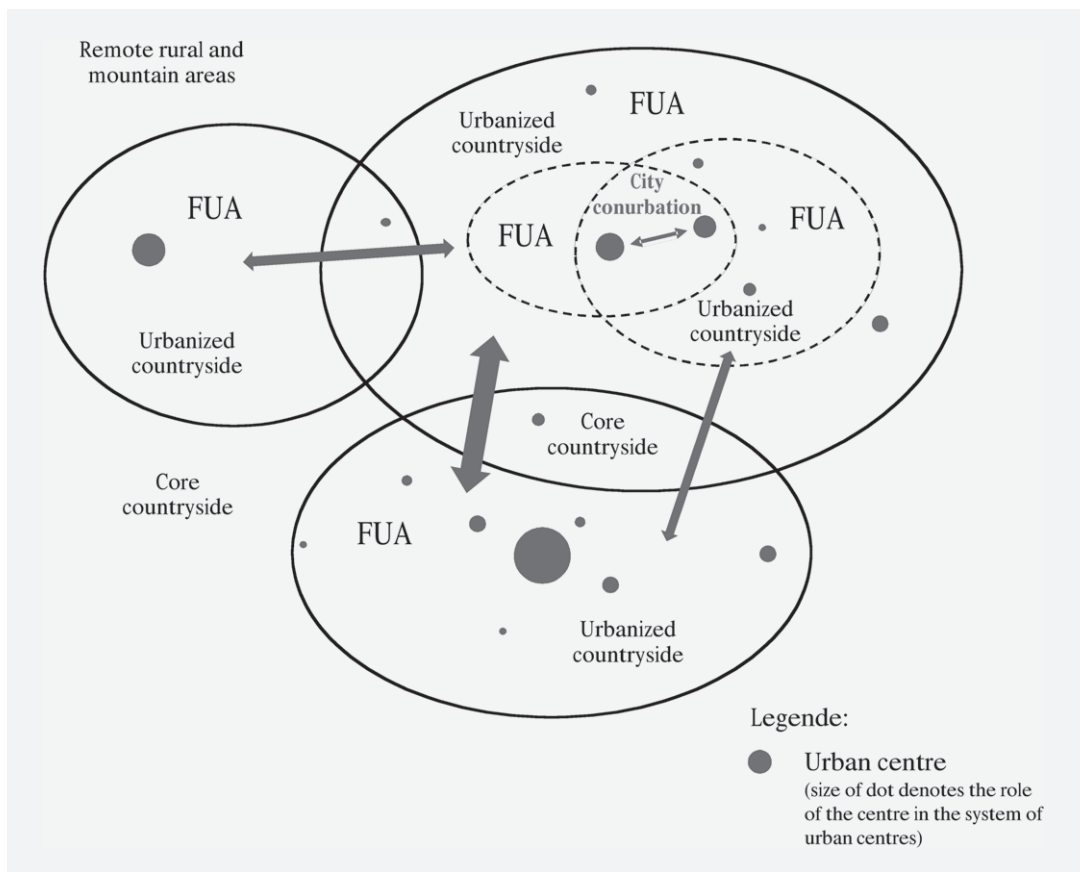


FIG. 1 SCHEMATIC DIAGRAM OF FUNCTIONAL URBAN AREAS [FUAs] AND THEIR SPATIAL DEFINITION
 SL. 1. SHEMATSKI PRIKAZ FUNKCIONALNIH URBANIH PODRUČJA I NJIHOVA PROSTORNA DEFINICIJA

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FUNCTIONAL URBAN AREAS AS INSTRUMENTS OF SPATIAL DEVELOPMENT POLICY AT THE REGIONAL LEVEL IN THE CASE OF SLOVENIA

FUNKCIONALNA URBANA PODRUČJA KAO INSTRUMENT POLITIKE PROSTORNOG RAZVOJA NA REGIONALNOJ RAZINI NA PRIMJERU SLOVENIJE

FUNCTIONAL URBAN AREA
FUNCTIONAL URBAN REGION
REGIONAL LEVEL
SLOVENIA
SPATIAL DEVELOPMENT

FUNKCIONALNO URBANO PODRUČJE
FUNKCIONALNA URBANA REGIJA
REGIONALNA RAZINA
SLOVENIJA
PROSTORNI RAZVOJ

Over the recent decades, the concept of functional urban areas [FUAs] has been relatively independently established in many countries around the world. The paper first addresses the FUA concepts and their application. Thereafter, a FUA analysis is conducted using an adapted version of the methodology used by OECD and Eurostat on the case of Slovenia. Results showed that the existing network of urban centres is solid enough so that FUAs are formed around them, which will in time grow into more solidly delineated functional regions [FRs].

Koncept funkcionalnih urbanih područja zaživio je tijekom posljednjih desetljeća, relativno nezavisno u mnogim zemljama širom svijeta. U ovome se članku razmatra koncept funkcionalnih urbanih područja i njihova primjena. Zatim se taj koncept analizira putem adaptirane verzije metodologije koju koristi OECD i Eurostat na primjeru Slovenije. Rezultati pokazuju da je postojeća mreža urbanih centara dovoljno čvrsta kako bi se oko njih formirala funkcionalna urbana područja koja će vremenom prerasti u funkcionalne regije s prepoznatljivim obrisima.

INTRODUCTION

UVOD

In recent years Slovenia has seen a revival of strategic documents and a revision of legislation in the areas key to connecting development and spatial objectives at the regional level. This paper focuses on one of the main goals in establishing the regional level, which will "through gradual searching for solutions within the framework of functional regions, with a strong development function, consolidate regional identity and pave the way to the establishment of regions".¹

The already adopted Local Self-Government Strategy² addresses the vital role and function of city municipalities as Slovenia's development centres and largely also centres of development regions, which thereby take on the vital role of connecting cities and rural areas in their area of influence.

In the Development Vision and Goals of Slovenia³, urban centres (towns, cities, and conurbations) were also recognised as potential engines of development at the regional level; as part of preparations for the Spatial Development Strategy of Slovenia 2050, the ministry responsible for spatial planning commissioned the study Functional Urban Areas⁴ to check the possibility of establishing functional urban areas whose centres could, under the existing legislation and complemented by cross-sectoral cooperation, carry out the function of regional centres until the establishment of provinces.⁵

In view of the aforementioned starting points, we want to answer the research question, i.e. whether the existing network of urban centres in Slovenia is solid enough so that FUAs are formed around them, which can in time grow into more solidly delineated functional urban regions [FURs] or even functional regions [FRs]. Therefore, the paper first provides the definitions of a functional region [FR], a functional urban region [FUR], and a functional urban area [FUA], and an overview of these concepts in Europe.

Then we analyse and provide a proposal of functional urban areas of urban centres, which provide the framework of Slovenia's polycentric urban network⁶, and which will, according to the latest strategic documents of Slovenia's development, continue to take on the role of engines of regional development. The gradual strengthening of regional identity will in the future help to identify and delineate space into functional urban regions and/or functional regions, which will assume the role of provinces, as specified in Article 143 of the Constitution of the RS.⁷

THEORETICAL BACKGROUND

TEORIJSKA PODLOGA

The concept of functional systems in space is derived from the idea of functional areas as complex, open, dynamic, and non-linear systems, which operate based on functional interactions between larger and smaller spatial units.⁸ A functional area is a dynamic system, which is to be distinguished from administratively defined areas such as administrative/statistical/development regions and provinces. It is precisely because of these dynamic features that functional areas are important when analysing economic, social, and environmental development as the basis for making important decisions relevant to development.⁹ The concepts of functional urban areas and functional urban regions are thus

1 Vlada RS, 2016: 15

2 Vlada RS, 2016

3 MOP, 2016

4 ZAVODNIK LAMOVSEK, DROBNE, 2017

5 Vlada RS, 2016

6 MOP, 2004

7 *** 2006

8 TOMANEY, WARD, 2000

9 VANHOVE, KLAASSEN, 1987

10 DROBNE et al., 2011

11 ANTIKAINEN, 2005

12 DROBNE, 2017

13 *** 1958

14 CHRISTALLER, 1933

15 COOMBES et al., 1979; ESPON 1.1.1 2005; ESPON 1.1.2 2004; BENINI et al., 2007; OECD, 2013a, 2013b; COOMBES, 2014; ESPON 2014; Eurostat, 2015

16 *** 2013a, 2013b

intended for the analysis of (urban) settlement development, expansion of economic activities, analysis and solving of social and spatial disparity, disparity in the labour market, and as a development support in all spatial levels.¹⁰ Here we refer to the integration into the wider European space as a possibility of implementing the adopted goals and measures at regional and local level.

FUNCTIONAL AREAS AND REGIONS

FUNKCIONALNA PODRUČJA I REGIJE

Nowadays, the importance of urban areas and urban regions¹¹ is stressed in relation to urban and regional systems, as urban centres are among the main considerations of social development. Here the concepts of functional urban areas and functional urban regions are often exposed; they are intended mostly to analyse and solve social and spatial disparities between various impact areas of cities, city centres and other similar problems, such as urban development, expansion of economic activities, and labour market disparities.¹²

A functional urban area [FUA] is a functionally connected area of an urban centre and its catchment area. Berry and Garrison¹³ consider the urban centre as a central place from Christaller's Central Place Theory¹⁴, whose size depends on the scope of goods and services that it offers to the inhabitants from near and remote catchment areas. A FUA is usually defined as an aggregation of basic data units [BDUs] from which a certain percentage of working age population commutes to work daily.¹⁵ In the literature, BDUs are usually municipalities or wards in the UK. According to OECD¹⁶, ESPON¹⁷, and Eurostat¹⁸, FUAs consist of BDUs from which at least 15% of working age population commutes to work. A functional urban region [FUR] is a functional urban area defined as a territorial unit that together with other FURs homoge-

neously covers a territory (e.g. a country). A FUR can be defined as a territorial unit at the NUTS 2 or NUTS 3 level of a region. A FUR is spatially less adaptable and more dependent on the data acquisition methodology or data processing than a FUA.¹⁹ A functional region [FR] is a system of strongly connected BDUs defined as a generalisation of the spatial pattern of interactions in a territorial unit.²⁰ The literature often addresses the following spatial interactions: population flows, traffic and goods flows, commodity flows, financial flows, information flows, gas/water/electricity flows, and similar.²¹ FRs, FURs, and FUAs are most often defined according to economic interactions, particularly in relation to labour commuting flows.²²

When defining FUAs we thus consider an array of indicators, such as the number of residents, labour commuting flows, number of passengers in public transport systems, number of students in higher education centres, number of companies in cities, the amount of goods carried, number of accommodation capacities, created gross value added, and administrative function of urban centres.²³ FUAs (also FURs) are modelled around urban centres that can be selected by agreement or based on quantitative criteria (population density, number of permanent residents in an urban centre area, percentage of residents both living and working in an urban centre area, percentage of population of an urban centre working in another urban centre of the same FUA, etc.). FUA (and FUR) centres are most often defined using high density areas which are the core of an urban area.²⁴ The concept of FURs has been most widely used in France, Canada, and the United States.²⁵ FUAs, as well as FRs and FURs, can be modelled in various spatial hierarchical levels.²⁶

The material for preparing the Spatial Development Strategy of Slovenia 2050²⁷ considers a FUA as a functionally connected area of an urban centre and its catchment area, whose size depends on the range of goods and services that it offers to the inhabitants from near and remote catchment areas. FUAs are understood as overlapping areas which do not necessarily cover the entire Slovenian territory (Fig. 1).

USING THE CONCEPT OF FUNCTIONAL SYSTEMS IN EUROPE

KORIŠTENJE FUNKCIONALNIH SUSTAVA U EUROPI

The studies concerning the concept of functional systems in Europe drew inspiration from the studies conducted in the US in the 1970s.²⁸ The study Growth Centres in the European Urban System²⁹ is the first attempt at

17 *** 2014

18 *** 2015

19 ESPON 1.1.1 2004; ESPON 1.1.2 2004; BENINI et al., 2007; COOMBES, 2014

20 VANHOVE, KLAASSEN, 1987

21 DROBNE, 2016

22 DROBNE, 2016

23 COOMBES et al., 1979; ESPON 1.1.1 2004; ESPON 1.1.2 2004; ZAVODNIK LAMOVŠEK, 2005; ŌIR, 2006; ESPON 1.4.3 2007; PICHLER MILANOVIC et al., 2008; DROBNE et al., 2010; LISEC et al., 2010; OECD, 2013a; COOMBES, 2014; ESPON 2014; Eurostat 2015; ZAVODNIK LAMOVŠEK, DROBNE, 2017

24 ANTIKAINEN, 2005

25 OECD, 2002

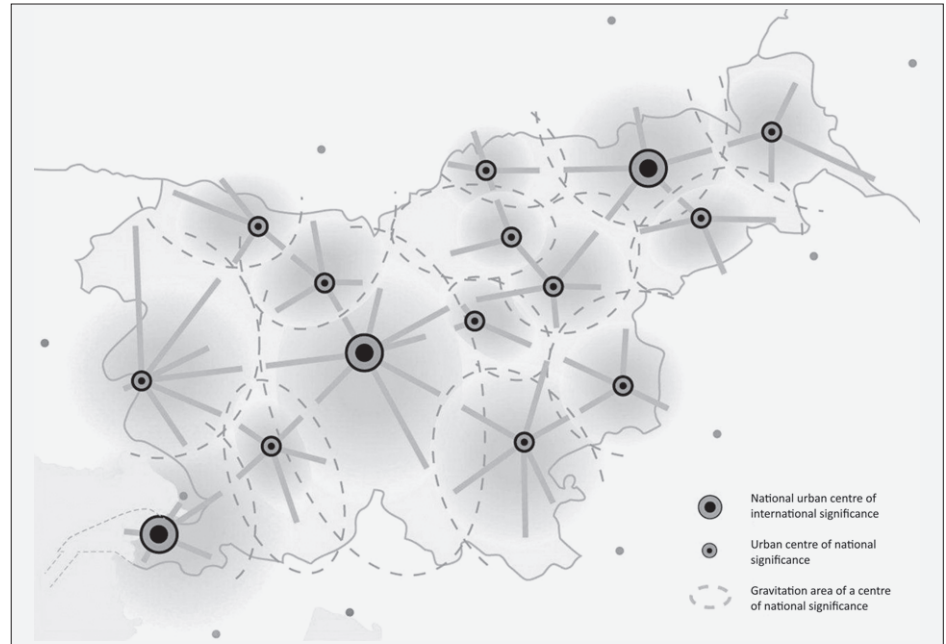
26 DROBNE, 2017

27 ZAVODNIK LAMOVŠEK, DROBNE 2017

28 More in: ZAVODNIK LAMOVŠEK [ed.], 2011

29 HALL, HAY, 1980

FIG. 2 15 GRAVITY AREAS OF TWO-STAGE-STRUCTURED CENTRES OF NATIONAL SIGNIFICANCE IN 2004
 SL. 2. 15 GRAVITACIJSKIH PODRUČJA CENTARA OD NACIONALNOG ZNAČAJA U 2004.



a comparative study of cities and urban areas of Europe vis-à-vis the American study by Berry from 1973.³⁰ The study addressed the development of metropolitan areas consisting of an urban core and its outlying belt. The central city area is in most cases densely populated and urbanised. The thus defined functional urban regions homogeneously cover the entire country territory.

Based on the methodology by Hall and Hay³¹, Cheshire and Hay³² identified 122 urban regions in 12 EU member states with a population over 330,000 and a central city area with more than 200,000 inhabitants for the periods between 1971-1981 and 1981-1988. The study was commissioned by EU with the purpose of identifying urban regions with negative population and employment growth and with structural problems. In the study, they defined the criteria for distributing funding from European structural and regional funds. Later Cheshire³³, based on the already applied methodology, delineated 241 FUA. In doing this, he analysed the 1990/1991 census data in European countries and the changes in FUA development between 1981 and 1991.

In a comparative study under the Costs of Urban Growth [CURB] project³⁴, analysed development processes of European cities and urban regions. The authors underlined the differences in the European urbanisation process. It is assumed that the development of cities follows a specific life-cycle in the urbanisation process, from centralisation/concentration to suburbanisation, deurbanisation and reurbanisation, or restoration of population concentration in the narrow city

area. The study using the FUA concept as defined by Hall and Hay³⁵ analysed the changes in the development of urban areas (centring in a FUA) in the period 1950-1975. The outer ring is defined narrower than by Hall and Hay³⁶ and includes all the municipalities from which at least 15% of working-age population commutes to work to the central urban area. This definition was then used in 10 Western European and 4 Eastern European countries (Bulgaria, Hungary, Poland, and Yugoslavia), mostly based on census data for the period 1950-1970. The comparative studies by Hall and Hay³⁷ and van den Berg et al.³⁸ were followed by national studies investigating urbanisation processes in France³⁹, Denmark⁴⁰, Switzerland⁴¹, Austria⁴², Germany⁴³, The Netherlands⁴⁴, Ireland⁴⁵, United Kingdom⁴⁶, Italy⁴⁷, and elsewhere.

Later, in the 1990s, comparative studies of the European cities, following the original studies by Hall and Hay⁴⁸ and van den Berg et

30 BERRY, 1973

31 HALL, HAY, 1980

32 CHESHIRE, HAY, 1989

33 CHESHIRE, 1995

34 VAN DEN BERG et al., 1982

35 HALL, HAY, 1980

36 HALL, HAY, 1980

37 HALL, HAY, 1980

38 VAN DEN BERG et al., 1982

39 PUMAIN, 1984; PUMAIN et al., 1989

40 MATTHIESSEN, 1983

41 ROSSI, 1983

42 SCHUBERT, 1986

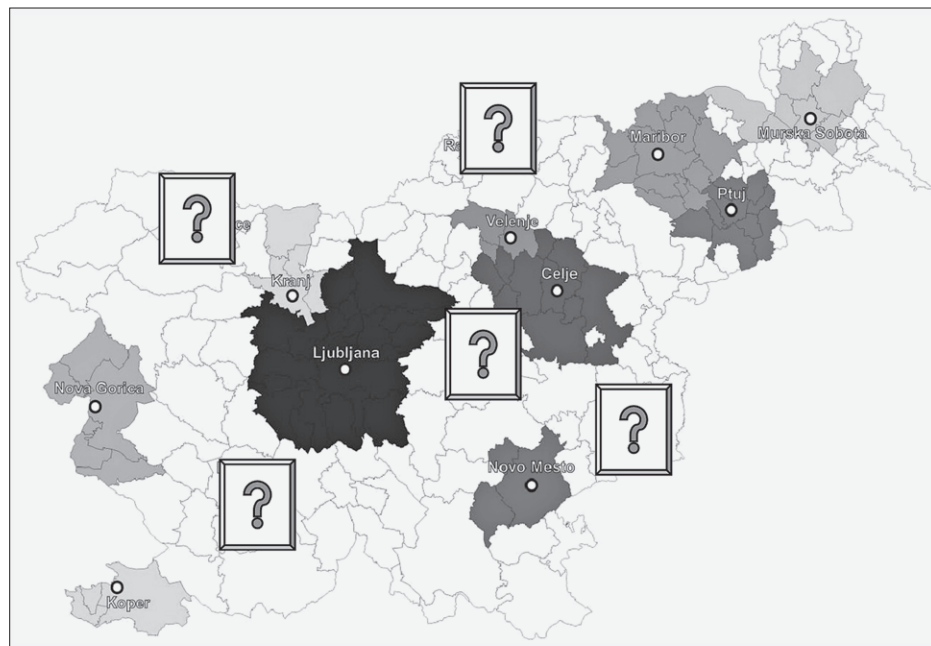


FIG. 3 10 FUNCTIONAL URBAN AREAS [FUAs] AND 5 ADDITIONAL CITY CONURBATIONS IN SLOVENIA IN 2006
 SL. 3. 10 FUNKCIONALNIH URBANIH PODRUČJA I 5 KONURBACIJA U SLOVENIJI 2006.

al.⁴⁹, were no longer carried out. Since 2000, analyses of socio-economic and territorial specificities of metropolitan areas and small and medium size cities have been conducted in Europe to improve our understanding of similarities and show cooperation potentials, as stated by ESDP.⁵⁰ The current studies at the European level are the product of transnational research networks and the establishment of the European Spatial Planning Observatory Network [ESPON]. The purpose of these studies is mostly to find answers to the changed conditions in cities and regions, and particularly to search for appropriate spatial policy instruments to increase (strengthen) attractiveness of cities for economy, improvement of public services for the population, sustainable use of natural resources and potentials, along with the goal of zero net building⁵¹ or restriction of urban growth due to economic, environmental, and spatial planning reasons.

FUNCTIONAL URBAN AREAS AND FUNCTIONAL (URBAN) REGIONS IN SLOVENIA

FUNKCIONALNA URBANA PODRUČJA I FUNKCIONALNE URBANE REGIJE U SLOVENIJI

In recent years, with changes in strategic documents and legislation⁵², Slovenia has been attempting to implement the concept of functional systems at the regional level. In the following, we thus present the most significant studies concerned with FUAs and FURs in Slovenia. The studies are presented chronologically, while 2004 is taken as a reference year, i.e. when the Spatial Development Strategy of Slovenia⁵³ was adopted, which specified the two-stage network of 15 centres of national significance. A gravitational (impact) area was defined around a centre of national significance, which also represents a completed regional area (Fig. 2), where a network of coherent and integrated urban settlements is developed. "Gravitational areas of urban centres of national significance comprising areas with 150,000 inhabitants on average, whose impact reaches to the gravitation areas of other centres of national or regional significance, are functional regions"⁵⁴ or FUAs, as they are understood in this paper (Fig. 1). These areas can be likened to wider urban areas, characterised by "strong everyday migrations to work and elsewhere [labour and other commuting] causing dense traffic – particularly through the use of personal vehicles – and thus imposing pressure on the entire area and the central city. The wider urban area is closely

43 FRIEDRICH, 1985

44 BORCHERT, 1982

45 BANNON, 1984

46 FIELDING, 1982, 1989, 1990; CHAMPION, 1989a, 1989b, 1992; SPENCE, 1982

47 SFORZI et al., 1989

48 HALL, HAY 1980

49 VAN DEN BERG et al., 1982

50 ESDP 1999

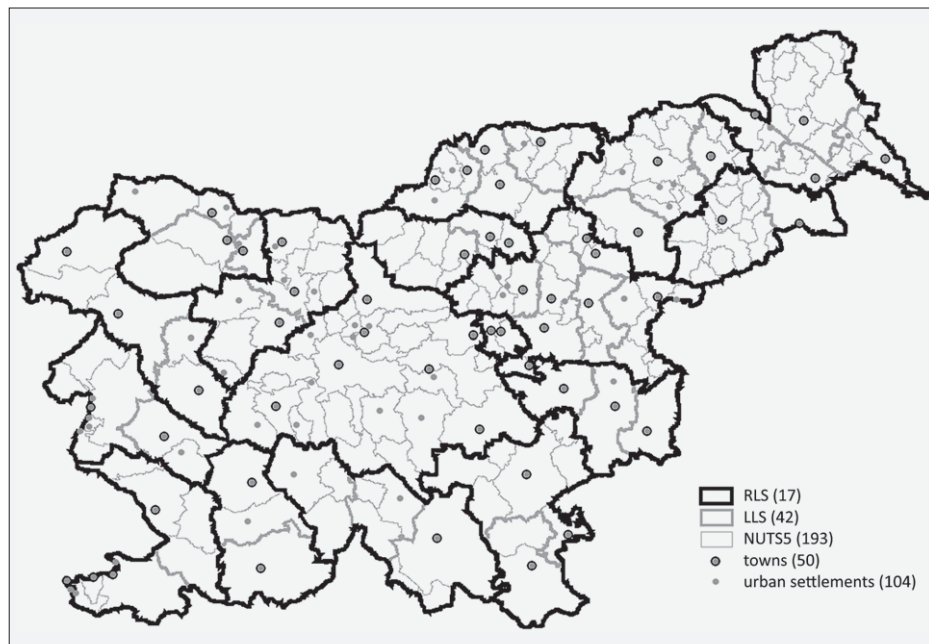
51 Science for Environment Policy, 2016

52 Presented in the Introduction of this paper

53 MOP, 2004

54 MOP, 2004: 21

FIG. 4 42 LOCAL LABOUR SYSTEMS [LLSs] AND 17 REGIONAL LABOUR SYSTEMS [RLSs] OR FUNCTIONAL URBAN REGIONS [FURs] WITH THEIR URBAN CENTRES OF SLOVENIA IN 2002
 SL. 4. 42 LOKALNA I 17 REGIONALNIH SUSTAVA RADNE SNAGE ILI FUNKCIONALNE URBANE REGIJE S URBANIM CENTRIMA U SLOVENIJI 2002.



linked to the central city with numerous jobs, diverse and varied production activities and services. A large number of mutually cooperating, interactive, and effectively interconnected centres shall be developed in a wider urban area”.⁵⁵

In 2004 Slovenia as an EU accession country was involved in the project ESPON 1.1.1⁵⁶, where based on the common criteria, which were used for approx. 1700 FUAs in 29 European countries, only six FUAs were defined for Slovenia. Due to the growing importance of medium and small urban areas, as demonstrated under the PlaNet CenSE⁵⁷ project so Ravbar et al.⁵⁸ by using additional criteria, defined 10 FUAs in Slovenia; Fig. 3), to which the ministry responsible for spatial planning added another five potential centres of FUAs. This led to a system of 15 FUAs, which is directly comparable to the gravity areas of 15 urban centres of national significance defined in SPRS.⁵⁹

The RePUS project⁶⁰ identified 42 local labour systems [LLSs] with at least 15,000 inhabitants. LLSs were defined as areas consisting of a central urban area and an accompanying area connected with labour commuting flows. The authors⁶¹ also distinguished 17 regional labour systems (RLSs or FUAs), composed of urban central municipalities and the municipalities from the catchment area representing strong origins of labour commuting. A municipality was included in a FUA when at least 25% of its working age population commuted to work in the centre on a daily basis. An important measure in developing RLS areas was also a 30-minute accessibility from

individual LLS areas to the main employment centre, i.e. a regional centre (Fig. 4).

Pogačnik et al.⁶² modelled functional regions and evaluated development potentials and possible scenarios of FR development in Slovenia. Pogačnik et al.⁶³ used the FR concept when analysing and proposing the delimitation of Slovenia into provinces. The final proposal of Slovenia's division into provinces was published in Pogačnik et al.⁶⁴

FUAs, FURs and FRs of Slovenia were analysed also by many other authors.⁶⁵ However, Drobne and Konjar⁶⁶ proved that the selected method of modelling FUAs, FURs, or FRs can significantly affect the formation of areas. The fact that a certain method had been successfully used in other countries does not necessarily guarantee that it will be appropriate for Slovenia or any other country as well.

55 MOP, 2004: 25

56 *** 2004

57 ÖIR 2006

58 *** 2006

59 MOP, 2004; see also Fig. 2

60 PICHLER MILANOVIĆ et al., 2008

61 PICHLER MILANOVIĆ et al., 2008

62 *** 2008, 2009a, 2009b, 2009c

63 *** 2009d, 2009e, 2009f, 2009g

64 *** 2009g

65 e.g. BOLE, 2004; DROBNE et al., 2009a, 2010a; KONJAR et al., 2010; LISEC et al., 2010; DROBNE, BOGATAJ, 2012 – a comprehensive list has been presented by DROBNE, 2016, 2017

66 *** 2011

67 *** 2011

68 MOP, 2004

In analysing the data on labour commuting flows there are, in fact, many national characteristics and specificities, such as the settlement system, demographic and education structure, geographic features, political and legal arrangements, infrastructure, and spatial development.⁶⁷

In modelling FUAs and FURs, the authors of these studies assumed the centres of national significance defined in the Spatial Development Strategy of Slovenia⁶⁸ as the starting point, or FUAs and FURs whose centres do not significantly deviate from the centres of national significance were determined as the outcome of modelling. A characteristic of these studies is also that they are mostly based on studying daily labour commuting flows, despite being the result of many different methodological approaches. Based on the studies examined we find that urban centres, which are the basis of Slovenia's urban (settlement) system, form a solid enough framework for establishing FUAs, which will provide the basis for connecting cities and rural areas (including less developed catchment areas) and a long-term guidance toward institutionalisation of regions.⁶⁹

METHODOLOGY

METODOLOGIJA

Functional urban areas of Slovenia were analysed using an adapted version of the methodology used by OECD⁷⁰ and Eurostat.⁷¹ The methodology was also tested under the European Observation Network for Territorial Development and Cohesion.⁷²

According to OECD⁷³ urban centres are first defined using population density, number of permanent residents in an urban centre area, percentage of residents both living and working in an urban centre area, and percentage of population of an urban centre working in another urban centre of the same FUA. While the first two parameters differ for various

69 Vlada RS, 2016

70 *** 2013a, 2013b

71 *** 2015

72 ESPON 2014

73 2013a, 2013b

74 In the European Union an urban centre has at least 50,000 inhabitants with permanent residence in a continuous area of an urban centre, with a population density of at least 1500 inhabitants per km².

75 MOP, 2004

76 *** 2004

77 In addition, the problem of data quality should be noted, since, with more accurate data, the role of Ljubljana would probably be much smaller. Although distributed throughout Slovenia, jobs in many branches of various companies of individual companies (e.g. Petrol, Mercator, Spar) are managed centrally, at the headquarters in Ljubljana.

TABLE I STATISTICS ON FUNCTIONAL URBAN AREAS [FUAs] DEFINED AROUND URBAN CENTRES OF NATIONAL IMPORTANCE IN SLOVENIA

TABL. I STATISTIKA FUNKCIONALNIH URBANIH PODRUČJA OKO URBANIH CENTARA OD NACIONALNOG ZNAČAJA U SLOVENIJI

Functional Urban Area [FUA]	Municipalities in FUA				Area of FUA [km ²]				Population [1000 inhabitants]			
	Year 2000		Year 2015		Year 2000		Year 2015		Year 2000		Year 2015	
Ljubljana	29	15%	58	27%	3,187	16%	6,576	32%	551	28%	845	41%
Maribor	25	13%	24	11%	1,474	8%	1,458	7%	251	13%	244	12%
conurbation Koper-Izola-Piran	4	2%	5	2%	579	3%	579	3%	84	4%	92	4%
Celje	10	5%	11	5%	930	5%	967	5%	128	6%	140	7%
Kranj	7	4%	7	3%	609	3%	609	3%	90	5%	96	5%
Murska Sobota	18	9%	19	9%	819	4%	838	4%	73	4%	69	3%
Nova Gorica	6	3%	7	3%	821	4%	850	4%	78	4%	77	4%
Novo Mesto	6	3%	12	6%	715	4%	1,165	6%	61	3%	82	4%
Postojna	2	1%	2	1%	493	3%	493	2%	20	1%	22	1%
Ptuj	15	8%	16	8%	615	3%	647	3%	69	3%	68	3%
Velenje	7	4%	6	3%	434	2%	395	2%	60	3%	55	3%
conurbation Brežice-Krško-Sevnica	4	2%	7	3%	917	5%	1,058	5%	73	4%	79	4%
conurbation Jesenice-Radovljica	6	3%	6	3%	899	5%	682	3%	66	3%	60	3%
conurbation Slovenj Gradec – Ravne na Koroskem – Dravograd	9	5%	10	5%	784	4%	878	4%	64	3%	68	3%
conurbation Trbovlje-Hrastnik-Zagorje ob Savi	3	2%	3	1%	264	1%	264	1%	46	2%	43	2%

OECD members⁷⁴, the third and fourth parameters are the same for all: in an urban centre, at least 50% population with permanent residence live or work and two or more urban centres belong to the same FUA if at least 15% of inhabitants from one urban centre commute to another urban centre.

In our study of urban centres of Slovenia the modelling was not quantitative, as 15 centres of international and national significance were assumed according to the Spatial Development Strategy of Slovenia [MOP, 2004]: Ljubljana, Maribor, conurbation Koper-Izola-Piran, Murska Sobota, Ptuj, Celje, Velenje, conurbation Slovenj Gradec – Ravne na Koroskem – Dravograd, conurbation Brežice-Krško-Sevnica, Novo Mesto, conurbation Trbovlje-Hrastnik-Zagorje ob Savi, Kranj, conurbation Jesenice-Radovljica, Postojna, Nova Gorica). Then each urban centre (centre of international and/or national significance) was connected with all the municipalities from which at least 15% of their working age population commuted to the centre.

The analysis was done for three reference years: for the period prior to the Spatial Development Strategy of Slovenia⁷⁵, i.e. for 2000, for the period after the SPRS adoption⁷⁶, i.e. for 2007, and for the last available official data on labour commuting between Slovenia's municipalities⁷⁷, i.e. for 2015. Separately, we compared and evaluated FUAs and their changes by year investigated for national urban centres of international significance and for centres of national significance. We separately analysed the impact of conurbations on the formation of FUAs. Given

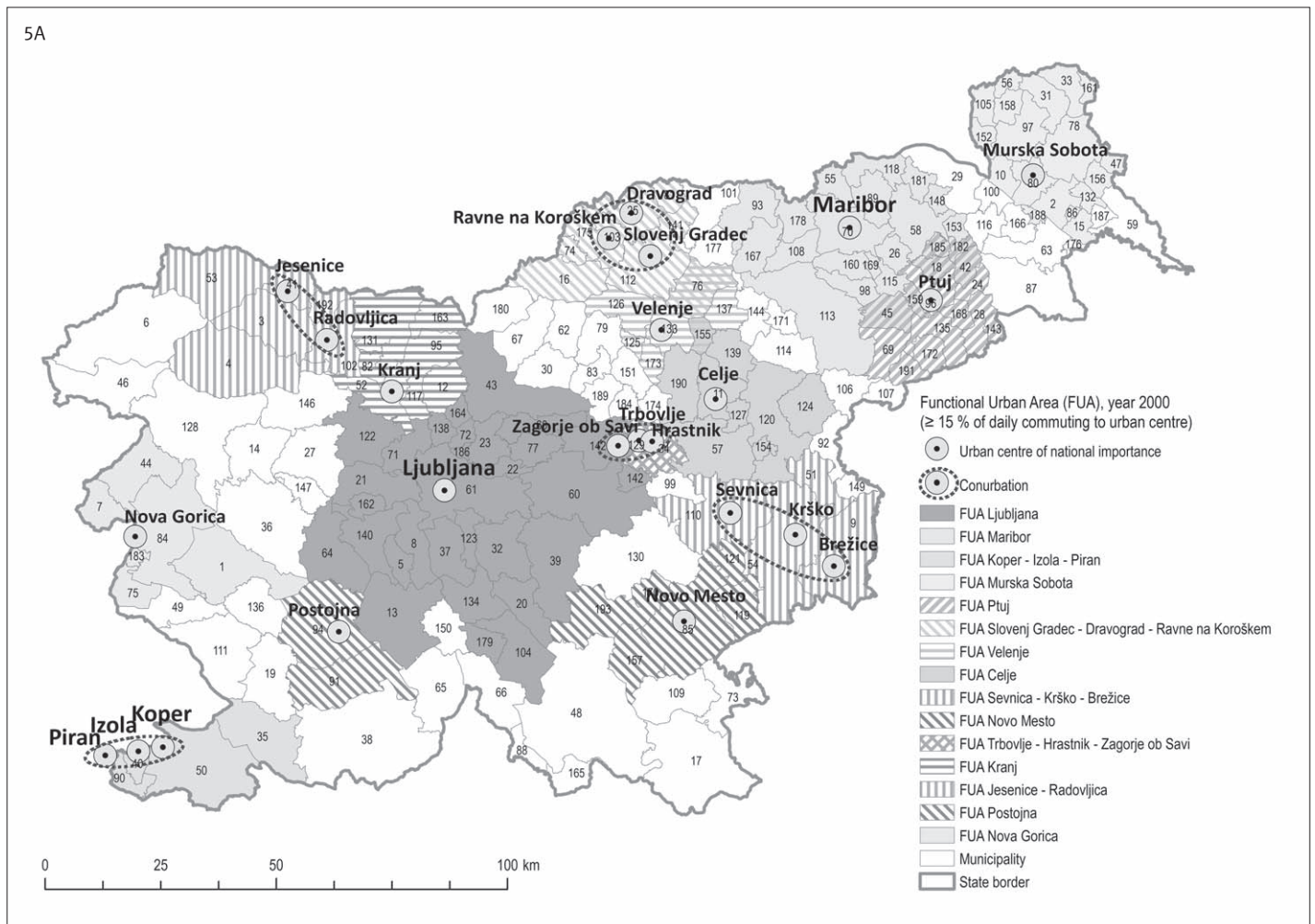


FIG. 5 15 FUNCTIONAL URBAN AREAS [FUAs] DEFINED AROUND URBAN CENTRES OF NATIONAL IMPORTANCE IN SLOVENIA IN (5A) 2000 AND (5B) 2015

SL. 5. 15 FUNKCIONALNIH URBANIH PODRUČJA OKO URBANIH CENTARA OD NACIONALNOG ZNAČAJA U SLOVENIJI 2000. I 2015.

the spatial limitations of this paper, we present only the results for FUA centres of national significance for 2000 and 2015.

RESULTS

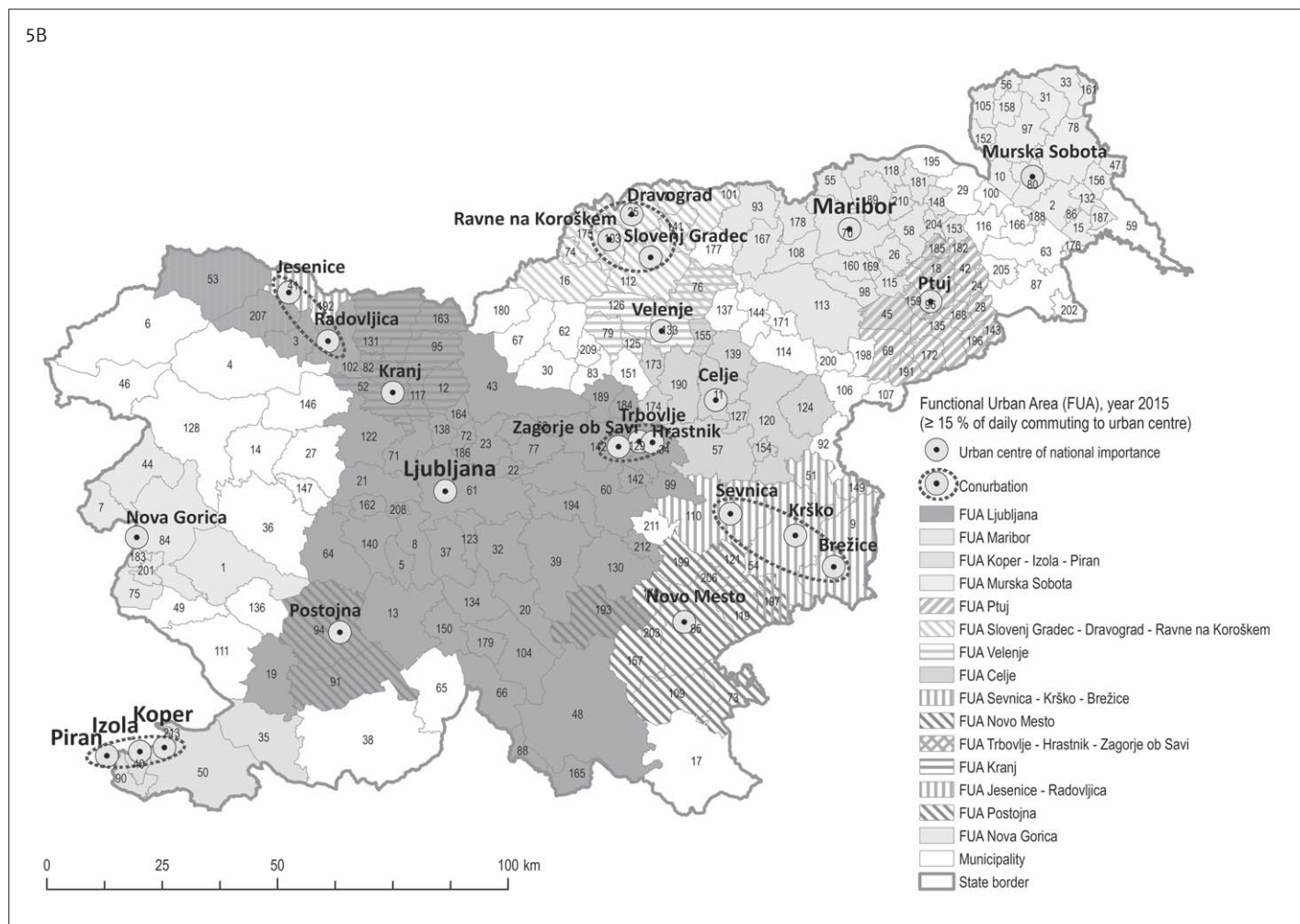
REZULTATI

The comparison of FUA centres of international significance (Ljubljana, Maribor, and conurbation Koper-Izola-Piran) in the 15-year study period demonstrates that only the influence of Ljubljana increased significantly; see Figures 5a and 5b and Table I. In its surface area, FUA Ljubljana increased by 3390 km², i.e. by 16% of the state's total area (from 16.4% in 2000 to 32.4% in 2015). The population in FUA Ljubljana increased by 293,466 (from 551,209 inhabitants in 2000 to 844,675 inhabitants in 2015). In 2015, as much as 40.9% of Slovenia's inhabitants lived in FUA Ljubljana, while 15 years earlier there were only 27.7%. The number of municipalities in FUA Ljubljana doubled. FUA Ljubljana increased mostly along the existing motorway

connections Jesenice-Ljubljana and Koper-Ljubljana, and southwards toward the Municipality of Kočevje.

Of all FUAs – both at the level of centres of international significance and centres of national significance – FUA Maribor decreased the most. It decreased both in population and the share of municipalities – despite the fact that in the period 18 new municipalities emerged, mostly in NE Slovenia. The number of population with permanent residence in FUA Maribor decreased by just over 7200 inhabitants (i.e. by 0.8% of inhabitants of the state), while the share of the municipalities in FUA decreased by 1.7%, and the share of the surface area in FUA Maribor decreased by 0.4% of the state's total area.

In terms of its surface area, FUA Koper-Izola-Piran did not change significantly, even though a new municipality emerged in its area (the Municipality of Ankaran split from the Municipality of Koper). A slight decrease in the FUA surface area is due to the changed



municipal border between the Municipality of Divača and the Municipality of Hrpelje-Kozina. In the coastal conurbation FUA, the number of inhabitants increased by just under 8000 inhabitants, i.e. 0.3% of inhabitants. Nevertheless, FUA Koper-Izola-Piran is inhabited by only 4.5% of Slovenia's residents – 9 times less than in FUA Ljubljana.

The comparison of FUAs of other centres of national significance by year shows further interesting characteristics. In surface area, number of municipalities, and volume of population (along with FUA Ljubljana) the following FUAs also increased: FUA Novo Mesto, FUA conurbation Brežice-Krško-Sevnica and FUA conurbation Slovenj Gradec – Ravne na Koroškem – Dravograd. FUA Ptuj increased in its surface area, while FUA Celje, FUA Kranj and, only marginally, FUA Postojna increased in the number of inhabitants. The surface area, the number of municipalities and the volume of population decreased – along with the mentioned FUA Maribor – also in FUA conurbation Jesenice-Radovljica, FUA Murska

Sobota, FUA Velenje and FUA conurbation Trbovlje-Hrastnik-Zagorje ob Savi.

We find that FUAs of national centres of international significance (Ljubljana, Maribor, Koper-Izola-Piran) do not overlap – even though in the 15-year period FUA Ljubljana came near FUA Koper-Izola-Piran. In three FUA national centres of international significance, which cover 42.5% of Slovenian territory, 87 (41%) municipalities are included. More than a half of Slovenia's population (just below 60%) live there.

At the level of centres of national significance some FUAs overlap; see Figures 5a and 5b. Partially overlap the following FUAs: FUA Maribor and FUA Ptuj, FUA Slovenj Gradec – Ravne na Koroškem – Dravograd and FUA Velenje, FUA Velenje and FUA Celje, FUA Brežice-Krško-Sevnica and FUA Ljubljana, FUA Novo Mesto and FUA Ljubljana, and FUA Jesenice-Radovljica and FUA Ljubljana. We find that FUA Ljubljana in the period 2000-2015 increased significantly and fully covered FUA

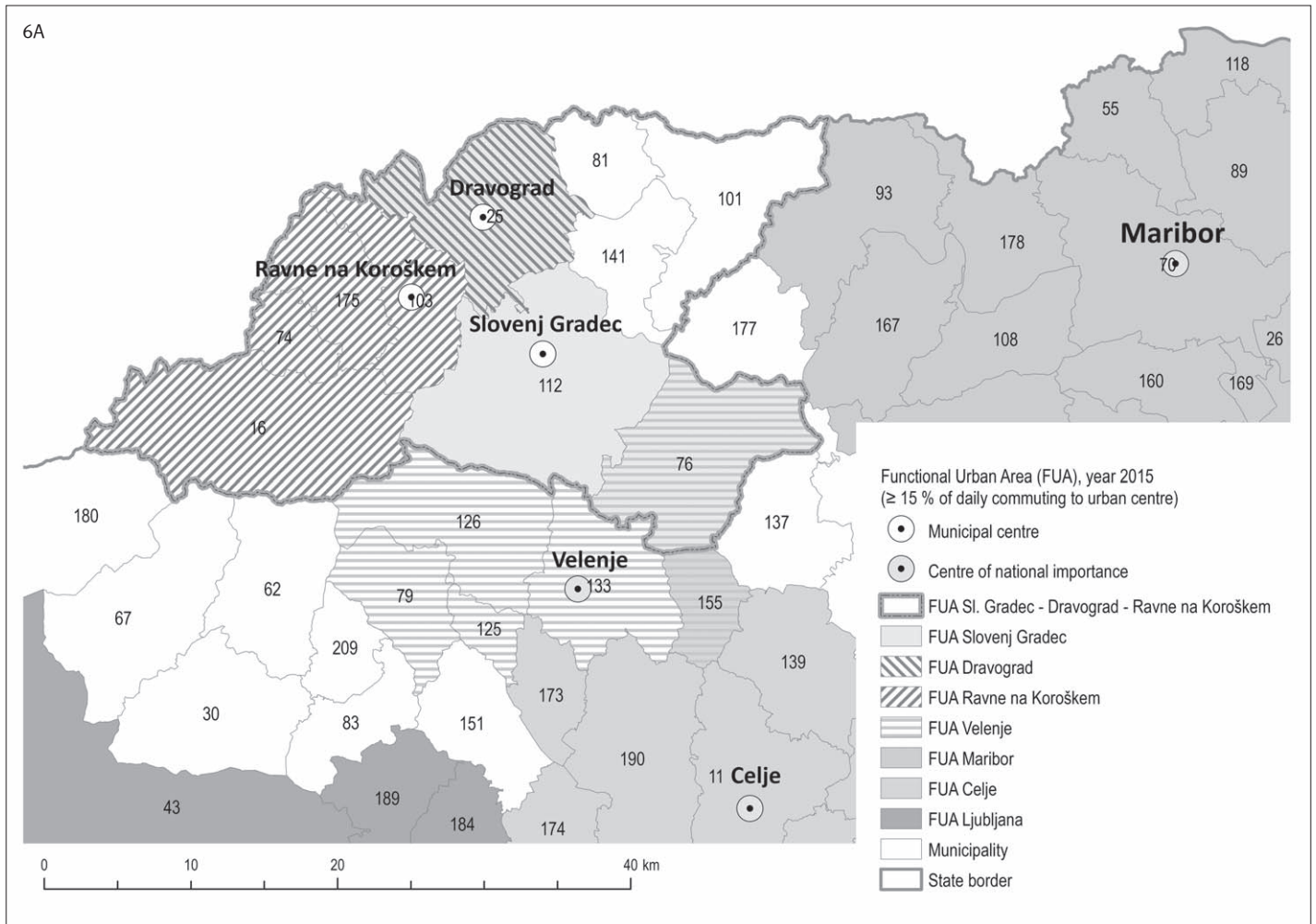


FIG. 6 IMPACT OF CONURBATIONS SLOVENJ GRADEC – RAVNE NA KOROŠKEM – DRAVOGRAD (6A), AND BREŽICE-KRŠKO-SEVNICA AND TRBOVLJE-HRASTNIK-ZAGORJE OB SAVI (6B) ON THE FORMATION OF FUAs (YEAR 2015)

SL. 6. UTJECAJ KONURBACIJA SLOVENJ GRADEC – RAVNE NA KOROŠKEM – DRAVOGRAD (6A), I BREŽICE-KRŠKO-SEVNICA I TRBOVLJE-HRASTNIK-ZAGORJE NA SAVI (6B) NA FUAs FORMACIJI (GODINA 2015.)

Kranj, FUA Postojna, and FUA Trbovlje-Hrastnik-Zagorje ob Savi.

Analysing the impact of conurbations to the formation of FUAs revealed an important impact of conurbation Brežice-Krško-Sevnica and conurbation Slovenj Gradec – Ravne na Koroškem – Dravograd. In the case of conurbation Slovenj Gradec – Ravne na Koroškem – Dravograd, the FUA is smaller by 3 municipalities, if we take into account the individual central municipalities, in by 2 municipalities in the case of conurbation Brežice-Krško-Sevnica. Together the central municipalities in these two conurbations are significantly more competitive than individually; see Figures 6a and 6b where the situation for 2015 only is shown. This influence was not detected in other conurbations.

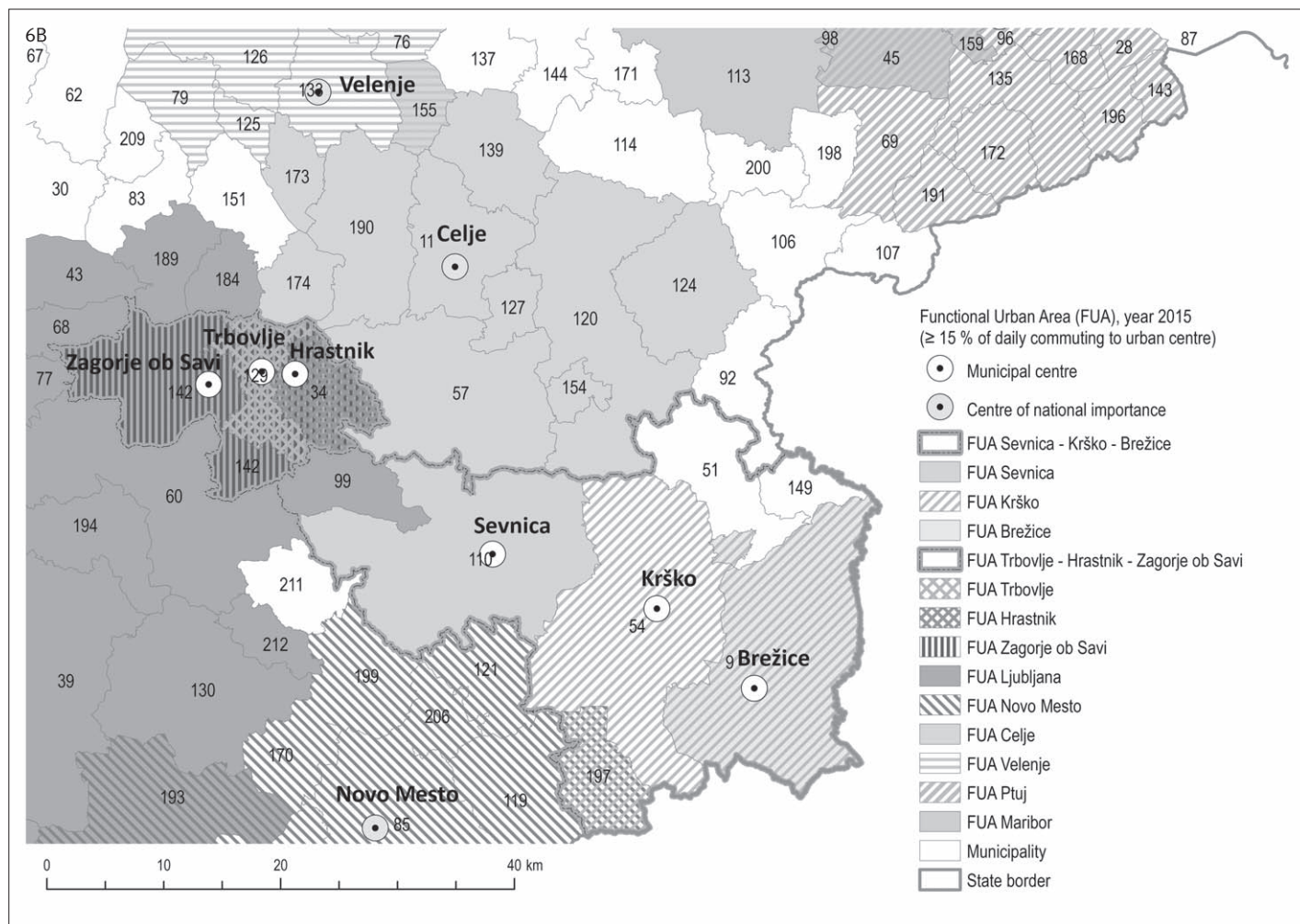
The analyses of labour mobility confirmed, similarly to the previous analyses of studies and research performed, the assumption that the selected centres of international and national significance, despite the described

changes over the last 15 years and the increasing influence of FUA Ljubljana, are a solid enough framework of Slovenia's settlement system.

DISCUSSION AND CONCLUSION

DISKUSIJA I ZAKLJUČAK

The new dynamics of cooperation is a serious challenge (particularly) for governance of cities and urban areas that stay, more or less, rigidly connected with closed administrative areas (municipalities, provinces, regions). Hence, by studying functional regions we wanted to find the basis for shaping the strategies of connecting the cities with their surroundings, with other cities, and in relation to higher levels of governance, e.g. state and European Union. Here FUAs play an important role as they provide the easiest way to



achieve the goals, i.e. through collaboration and distribution of responsibility among partners in their functionally connected regions. Rather than replacing the existing administrative regional structures, they can importantly complement them.⁷⁸

The FUA concept is thus not a rigid administrative structure where the already strong regions develop at the expense of weaker ones. The purpose is to promote close cooperation between centres, their surroundings, and peripheral regions. Many regional, national, and international functions are related to FUAs, where the level of concentration and interaction testifies to their significance. Slovenia, too, is trying to establish FUAs and thus strengthen economic development, improve public services, and sustainable use of natural resources. To this end, some of its strategic documents, which strongly stress

the need for establishing a regional level, which will be based on a strong framework of urban centres both in terms of economic and spatial development, and in terms of developing local self-governance, have been adopted, while some are currently under development.⁷⁹

This paper showed that the existing network of urban centres is solid enough that functional urban areas [FUAs] are formed around them, which will in time grow into more solidly delineated functional urban regions [FURs], or even functional regions [FRs]. In this sense, the existing Slovenia's urban network does not need any major changes; on the contrary, attention should be devoted to ensuring their mutual balance. This analysis' outcomes revealed an increasing strengthening and dominance of FUA Ljubljana, whose impact is reaching across FUA Postojna, FUA Kranj, and FUA Trbovlje-Hrastnik-Zagorje ob Savi. Similarly, in their study on the Gorenjska case, Rus, Razpotnik Visković and Nared⁸⁰ pointed to the strengthening of the influence

79 MOP, 2013; MOP, 2016; SVRL 2016a; Vlada RS, 2016

80 RUS, RAZPOTNIK VISKOVIĆ, NARED, 2013

of Ljubljana, and at the same time the decline of the power of Kranj and the Gorenjska conurbation. This loss occurred partly at the expense of strengthening of Ljubljana, and partly at the expense of the newly emerging municipalities, which greatly increased their influence. Furthermore, Nared, Bole, Breg Valjavec et al.⁸¹ pointed to the discrepancy between the definition of the centrality levels in SPRS and the current situation, as demonstrated by the example of the overstated role of Postojna.

Regardless of the fact that this study was directed mostly at formation of FUAs at the regional level, the results showed the manifold aspects of the question addressed. Two dimensions of establishing the regional level open up: (1) Internal development of an individual region and thus balanced and sustainable development of the entire country and (2) competitive ability of a FUA given the neighbouring regions and states. The strengthening of FUA Ljubljana can thus be regarded from a viewpoint of external development of Slovenia. The strengthening of FUA Ljubljana as a national centre of international significance can decrease the role of FUA Maribor and FUA Koper-Izola-Piran internationally. The strengthening of FUA Ljubljana has an even greater impact on its internal development and the role of other urban centres of national significance, which thereby

lose their power and are unable to take on the role of connecting urban and rural areas in their areas of influence. The strengthening of only one FUA, e.g. FUA Ljubljana, contributes to neither Slovenia's spatial development in its wider international space nor to its internal development at the regional level.

After consolidation of FUAs and strengthening regional identity it will be necessary to gradually develop the instruments and regional policy measures, which will gradually lead to the establishment of provinces.⁸² Their implementation will require both the institutional or formal framework based on a connected sectoral (co)operation (e.g. the ministry responsible for spatial planning, economic development, regional policy) as well as an informal framework supporting the implementation of adopted policies in various levels and among various actors. At the spatial development policy level, concrete measures must be incorporated into the renewed Spatial Development Strategy of Slovenia, as well as their consistent implementation ensured, in particular through the instrument of the regional spatial plan, which will be enforced by the new law on spatial planning.

[Translated by authors;
Proofread by: MOJCA VILFAN, univ.dipl.angl.]

⁸¹ NARED, BOLE, BREG VALJAVEC et al., 2017

⁸² Vlada RS, 2016: 15

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SOURCES

IZVORI

ILLUSTRATION SOURCES

IZVORI ILUSTRACIJA

- FIG. 1 Adapted from: ZAVODNIK LAMOVSĚK, AND DROBNE, 2017: 7
- FIG. 2 MOP, 2004: 22
- FIG. 3 RAVBAR et al., 2006
- FIG. 4 PICHLER MILANOVIĆ et al., 2008: 29
- FIG. 5, 6 Authors

SUMMARY

SAŽETAK

FUNKCIONALNA URBANA PODRUĀJA KAO INSTRUMENT POLITIKE PROSTORNOG RAZVOJA NA REGIONALNOJ RAZINI NA PRIMJERU SLOVENIJE

Koncept funkcionalnih urbanih sustava u posljednjih se nekoliko desetljeća u pojedinačnim zemljama razvijao neovisno, što pokazuje na globalnu prirodu trendova prostornog razvoja gradova i njihovih srih područja na jednoj strani, a na drugoj i široku mogućnost upotrebe tih koncepata za rješavanje društvenih i prostornih nejednakosti, usmjerenja i proširenja gospodarskih djelatnosti, rješavanja problema nejednakosti na tržištu rada, za primanje i izvođenje važnih razvojnih odluka na svim razinama odlučivanja. S tog polazišta članak prvo ukazuje na vrlo aktualne koncepte funkcionalnih sustava koji izlaze iz ideje funkcionalnih područja kao cjelovitih, otvorenih, dinamičnih i nelinearnih sustava, koji rade na temelju funkcionalnih interakcija između većih i manjih prostornih jedinica, koja se po pravilu ne slazu s administrativnim jedinicama. U tim sustavima danas su najaktualnija funkcionalna urbana područja i funkcionalne urbane regije. Funkcionalno urbano područje [FUP] jest funkcionalno povezano područje urbanog središta i njegova zaleđa koje se odredi kao sustav temeljnih prostornih jedinica (najčešće općine) iz kojih se određeni postotak radnika svaki dan vozi na rad u urbano središte. FUP-ovi se mogu međusobno i prekrivati, no istodobno nije nužno da pokrivaju cjelokupni teritorij države. Nasuprot FUP-u, funkcionalna urbana regija [FUR] određena je kao teritorijalna jedinica koja sa svim ostalim FUR-ovima pokriva cijelu površinu određenoga teritorija (npr. države). Obično se FUR određuje na razini NUTS 2 ili NUTS 3 pa je zato manje prilagodljiva od FUP-a.

Koncept funkcionalnih sustava prvi se put počeo razvijati u SAD-u, a po tom uzoru i u Europi nastaje prva studija gradova i gradskih područja [BERRY, 1973.]. Najutjecajnija je metodologija za istraživanje u Europi nastala 1980., kada su Hall i Hay odredili 122 urbane regije u 12 europskih zemalja. Na temelju te metodologije slijedile su mnogobrojne studije [VAN DEN BERG et al., 1982.; ROSSI, 1983.; PUMAIN, 1984., 1989.; SCHUBERT, 1986.; CHESIRE, HAY, 1989.; CHESIRE, 1995. i dr.] koje su bile izrade-

ne za pojedinačne države (Bugarska, Mađarska, Poljska, Jugoslavija, Švicarska, Italija, Francuska, Danska, Nizozemska, Velika Britanija i dr.). Tek poslije prihvaćanja Europskih prostornih razvojnih perspektiva 1999. godine smjer istraživanja promijenio se u razotkrivanje društvenih, gospodarskih i teritorijalnih osobitosti i potencijala metropolitanskih područja, srednje velikih i malih gradova u Europi. Današnje istraživanje na tom je području najčešće rezultat projekata u sklopu transnacionalne mreže za prostorno planiranje [European Spatial Planning Observation Network – ESPON] koja je pokrenuta 2000. godine.

U posljednjih nekoliko godina i Slovenija službeno prihvaća koncept FUP-a kao moguće rješenje za povezivanje razvojnog i prostornog planiranja s ciljem uspostavljanja regionalne razine koja još nije ostvarena. Kako je bilo u Sloveniji već nekoliko neuspjelih pokušaja uspostavljanja regija kao administrativnih jedinica, koncept FUP-a pokazao se kao moguće rješenje za utvrđivanje regionalnog identiteta na pojedinim područjima, s daljnjom mogućnošću prijelaza na osnivanje administrativnih regija. Polazište za takvo stajalište već je u Strategiji prostornog razvoja Slovenije [SPRS] iz 2004. godine i u nekoliko samostalnih geografskih i prostornoplanerskih studija ili studija u sklopu ESPON projekata, u kojima su određene moguće FUP na razini općina ili razini NUTS 3. Radi najnovijih istraživanja za potrebe nove strategije prostornog razvoja Slovenije i povezivanja s drugim strateškim dokumentima i zakonodavstvom, izradili smo posebnu analizu FUP-a za Sloveniju. Predložili smo prilagoden metodologiju koja proizlazi iz metodologija koje prihvaćaju OECD i EUROSTAT. Upotrijebili smo kriterije za formiranje FUP-a: (1) najmanje 50% stanovništva ima stalno prebivalište u određenom urbanom središtu, (2) dva ili više urbanih središta pripadaju istom FUP-u ako najmanje 15% radnika iz jednoga urbanog središta radi u drugome urbanom središtu, (3) za analizu preuzeli smo 15 urbanih središta po SPRS-u iz 2004. godine. Analizu smo izradili za tri referentne godine: (a)

2000. godina za razdoblje prije nastanka SPRS-a, (b) 2007. godina za razdoblje nakon prihvaćanja SPRS-a i (c) 2015. godina, za koju raspolazemo posljednjim službenim podatcima o radnoj mobilnosti između općina. Usto, analizu smo izradili na razini 15 urbanih središta nacionalnoga značenja i na razini triju međunarodnih urbanih središta (Ljubljana, Maribor i konurbacija Koper-Izola-Piran). Rezultati istraživanja na razini međunarodnih urbanih središta u posljednjih petnaest godina pokazali su da najviše jača utjecaj Ljubljane, odnosno da se FUP Ljubljana povećala i zauzima 32% cjelokupnoga teritorija države (u 2000. godini nezin je obuhvat bio samo 16,4%). Suprotno od Ljubljane, FUP Maribor smanjila se po broju stanovnika, ali i po svom utjecaju na okolne općine. Površina FUP konurbacije Koper-Izola-Piran ostala je više-manje jednaka, a broj stanovnika povećao se za 8000. U usporedbi s Ljubljanom to je ipak malo jer u FUP-u konurbacije Koper-Izola-Piran živi samo 4,5% stanovnika Slovenije, što je devet puta manje negoli u FUP-u Ljubljana. Usporedba FUP-ova na razini 15 nacionalnih središta pokazuje detaljnije rezultate. Značajno su se, pored FUP-a Ljubljana, povećale samo još FUP Novo Mesto, FUP konurbacija Slovenjogradec – Ravne na Koroškem – Dravograd i FUP konurbacije Brežice-Krško-Sevnica. Između ostalog, ustanovili smo da se jedino FUP Ljubljana, FUP Maribor i FUP konurbacije Koper-Izola-Piran međusobno ne prekrivaju, ali je FUP Ljubljana prekrila cjelokupni FUP Kranj, FUP Postojna i FUP konurbacije Trbovlje-Hrastnik-Zagorje. Svi se ostali FUP-ovi međusobno prekrivaju u manjem ili većem obuhvatu. Na temelju izradene analize možemo ustanoviti da postojeća nacionalna urbana središta, koja su određena već u SPRS-u 2004. godine, još uvijek predstavljaju dovoljno jaku urbanu mrežu na kojoj se može temeljiti koncept FUP-a u Sloveniji. Usto, ipak treba imati u vidu da FUP-ovi ne pokrivaju cjelokupni teritorij pojedine države, tako da njihova primjena ima više cilj dopunjavanja funkcioniranja administrativnih regija, jer ih ne mogu u potpunosti zamijeniti.

BIOGRAPHIES

BIOGRAFIJE

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