

Review paper

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NOMENCLATURE OF STATISTICAL TERRITORIAL UNITS: POSSIBILITIES OF APPLICATION IN SERBIA

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Abstract: NUTS classification of territorial units is a framework for presenting a standardized statistical data in geographical areas throughout the European Union (EU). The main purpose of the NUTS classification of geographic areas is to provide a framework for collecting and publishing standardized statistical information, which can be used for the analysis, as well as a framework for European policy initiative. According to the NUTS classification geographic areas are divided according to different hierarchical levels: NUTS 1 is the largest territorial unit, which includes territorial group of 3 to 7 million inhabitants. NUTS 2 has a range of 800 thousand to 3 million and NUTS 3 has a range of 150 to 800 thousand inhabitants. Serbia has classified their regions according to NUTS 2 classification, because this classification is adequate for institutional support in Serbia. NUTS 1 and NUTS 3 classification are less applicable in Serbia due to inadequate institutional support, lack of political will or the high costs of regionalization.

Key words: NUTS, regions, districts, Serbia.

Introduction

Even though regionalisation has a long tradition in a number of European countries (specially in the countries that have been arisen from unification of the historic provinces and kingdoms – such as Italy, Spain or Germany), issues of regionalisation have been actualised mostly with the introduction of Nomenclature of territorial units for statistics - NUTS (Fr. Nomenclature des unités territoriales statistiques), which classifies geographic areas and ensures the framework for gathering and publishing of standardized statistic information, which can be used for analysis, but also as a framework for European political initiative (Zarić & Vuković, 2010). Regional issues become the subject of scientific and political interests during 1980's, although some authors have dealt with this issue in earlier periods (Friedmann & Alonso, 1964), and have very important role in international economic debates during the last decade (Brakman & Garretsen, 2003; Boschma, 2004; Kitson, Martin & Tyler, 2008;

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Porter, 2003). At the same time, scientific importance of economic geography, which has a significant role in process of regionalisation, has been increasing (Krugman, 1991a; Krugman, 1991b; Vuković & Li, 2010). Since 1980's, it gains interdisciplinary approach by using socio-economic, cultural and political sciences (Boschma & Frenken, 2005).

According to Eurostat example (European Bureau of Statistics), regions that need certain assistance from the EU structural funds will not be chosen *ad hoc*, but will correspond to certain regions in NUTS hierarchy (Commission of the European Communities, 2007c).

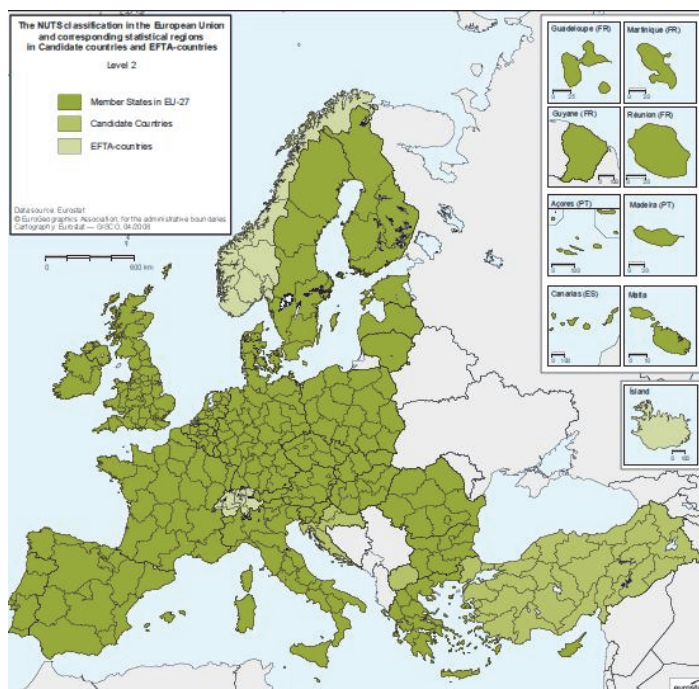


Figure 1. NUTS classification in the European Union, candidate countries and EFTA countries. (<http://epp.eurostat.ec.europa.eu>)

It is also important to mention that this classification is not based on adoption of territorial units from political and administrative system (such as local administrative regions); rather, these units are analytically derived ones or units which have only one type of economic activity. This implies precisely the negative side of such classification e.g. that there might be significant variations

between size and nature of NUTS areas on the same level, both within a country and between the countries as well.

NUTS classification of territorial units represents an attempt to present standardized statistical data of geographic regions in the entire European Union (EU). That is not a practical suggestion for each country within the EU to discard its locally admissible territorial units, which might have deep historical roots, in order to intrude organization of local authorities for the sake of a geographic hierarchy which would be centrally imposed. NUTS approach classifies territorial units which are used by certain countries in a number of levels, whereas each of them ensures wide range of comparability along the EU (Commission of the European communities, 2007c).

According to NUTS classification, geographic regions are hierarchically divided based on various levels: NUTS 1 is the largest territorial unit, which encompasses territorial set of 3 to 7 million inhabitants. NUTS 2 has range of 800 000 and 3 000 000 inhabitants, whereas NUTS 3 has range of 150 000 to 800 000 inhabitants. Apart from this classification, NUTS hierarchy of territorial units also encircles local administrative units – LAU, which can be classified as two additional NUTS levels: NUTS 4 and NUTS 5, but such classification is not important (implemented) for all members of the EU. NUTS 4 (LAU 1) level is defined only for the following countries: Bulgaria, Cyprus, Czech Republic, Estonia, Finland, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Slovenia, Slovakia and Great Britain. NUTS 5 (LAU 2) comprises of cca 120 000 municipalities, equivalent for 27 countries – members of the EU (since 2007).

Table 1. NUTS classification

NUTS	Minimum number of inhabitants	Maximum number of inhabitants
NUTS 1	3 000 000	7 000 000
NUTS 2	800 000	3 000 000
NUTS 3	150 000	800 000

Source of data: Eurostat, 2007.

NUTS exists for more than 30 years with the aim to ensure one unified overview of territorial units for the purpose of regional statistics for European Union, as well as for socio-economic analysis of the region and establishment of the framework of Community's Regional policy. Such classification is used by the

Community since 1988, but it has been adopted only in 2003, after three years of preparation (Eurostat, 2007).

Table 2. Correspondence between the NUTS levels and the national administrative units (2007).

Country	NUTS 1		NUTS 2		NUTS 3	
BE	Geweste/ Régions	3	Provincies/ Provinces	11	Arrondissements- nten/ Arrondissements	44
BG	Rajoni	2	Rajoni za planirane	6	Oblasti	28
CZ	Území	1	Oblasti	8	Kraje	14
DK	-	1	Regioner	5	Landsdeler	11
DE	Länder	16	Regierungsbezirke	39	Kreise	429
EE	-	1	-	1	Groups of Maakond	5
IE	-	1	Regions	2	Regional Authority Regions	8
GR	Groups of development regions	4	Periferies	13	Nomoi	51
ES	Agrupacion de comunidades Autonomas	7	Comunidades y ciudades Autonomas	19	Provincias + islas + Ceuta, Melilla	59
FR	Z.E.A.T + DOM	9	Régions + DOM	26	Départements + DOM	100
IT	Gruppi di regioni	5	Regioni	21	Provincia	107
CY	-	1	-	1	-	1
LV	-	1	-	1	Reģioni	6
LT	-	1	-	1	Apskritis	10
LU	-	1	-	1	-	1
HU	Statisztikai nagyrégiók	3	Tervezési-statisztikai régiók	7	Megyék + Budapest	20
MT	-	1	-	1	Gzejjer	2
NL	Landsdelen	4	Provincies	12	COROP regio's	40
AT	Gruppen von Bundesländern	3	Bundesländer	9	Gruppen von politischen Bezirken	35
PL	Regiony	6	Województwa	16	Podregiony	66
PT	Continente + Regioes autonomas	3	Comissaoes de Coordenação regional + Regioes autonomas	7	Grupos de Concelhos	30
RO	Macroregiuni	4	Regiuni	8	Judet + Bucuresti	42
SI	-	1	Kohezijske regije	2	Statistične regije	12
SK	-	1	Oblasti	4	Kraje	8
FI	Manner-Suomi, Ahvenanmaa / Fasta Finland, Åland	2	Suuralueet / Storumråden	5	Maakunnat / Landskap	20
SE	Grupper av riksområden	3	Riksområden	8	Län	21
UK:	Government Office Regions; Country	12	Counties (some grouped); Inner and Outer London; Groups of unitary authorities	37	Upper tier authorities or groups of lower tier authorities (unitary authorities or districts)	133
EU-25	-	91	-	257	-	1233
EU-27	-	97	-	271	-	1303

Source of data: Eurostat, 2010.

Classification of territorial units for statistics has been adopted on May 26th 2003 in accordance with paragraph 8 of the Regulation (EC) No. 1059/2003 of European Parliament and Council (Commission of the European communities, 2007c). According to last version, NUTS (2006) classification divides territory of European Union and its 27 member countries to 97 NUTS 1 regions, 271 NUTS 2 regions and 1 303 NUTS 3 regions (Table 2). Based on Regulation No. 1059/2003 on establishment of joint classification of territorial units for statistics, NUTS has been approved in 2003 and amended by Regulation No. 105/2007 in 2006.

It is based on the following principles:

- NUTS advocates institutional defining of the regions. According to this principle, a region can be defined as normative or analytical. Normative regions are reflection of political will, whereas analytical or functional regions are defined in accordance with analytic requests (using geographic or socio-economic criterion).
- NUTS advocate areas of general nature. Territorial units with specific activities (agriculture, industry, etc.) are identified with this particular principle.
- Hierarchical structure of NUTS nomenclature is based on three levels: NUTS 1, NUTS 2 и NUTS 3 (see Table 1).

Legally-historical framework

Functioning of the internal EU market demands establishment of statistical standards for gathering, transferring and publishing of statistical data, both on the national and EU level. In this regard, requests for comparative data were those which have led to harmonization and classification of statistical standards in very diverse areas which are significant for the functioning of internal EU market.

One of the basic pillars of European statistical system are regional statistics. NUTS classification, as hierarchically arranged system of identification and classification of territorial units within EU member countries, has been established by the European Bureau for Statistics in Luxembourg (Eurostat) in the early 1970's, in cooperation with national statistic authorities. This unique and coherent system has implemented territorial division of EU member countries for the purposes of regional statistics. Over the next three decades, implementation, modification and amending of Classification have been conducted by series of unformal deals, “gentlemen agreements” between EU member countries and Eurostat. Widening of process of European integration

and strengthening of its functional jurisdictions have demanded, however, evolution of this Classification into a legally standardised system on the EU level, as well as the establishment of clear rules for future modifications and amendments of this classification.

Within EU legislation, term NUTS has been mentioned for the first time (but without conceptual definition) in the Regulation of the Council (EEU) No. 2052/88 dated June 24th 1988 about structural funds' tasks, precisely in the part which defines economically underdeveloped regions (Commission of the European Communities, 1988).

Legal base of standardization of mutual Classification of territorial units for statistics is paragraph 5 of Treaty on European Union (*OJ C 191, 29.7.1992*), i.e. *subsidiary principle*, according to which "in areas which do not fall within its exclusive competence, the Community shall take action, in accordance with the principle of subsidiarity, only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale or effects of the proposed action, be better achieved by the Community."

Considering the fact that harmonisation of the regional statistics represents the goal which can be achieved more successfully by the Community itself, after several years of preparation, legal standardisation has been accomplished by the Regulation adopted by European Parliament and Council, No. 1059/2003 dated May 26th 2003, on establishment of joint classification of territorial units for statistics (Commission of the European Communities, 2003). Regulation has replaced previous Classification which was established by Eurostat in accordance with national statistics institutions. Regulation, as the secondary source of EU law, contains general legal norms with the highest level of liability and is directly applicable in all EU member countries. Making a comment about current practice of certain EU member countries to create their own national legislation in the area of regional classifications, EU Commission explicitly insists on compliance of legal norm about direct applicability of the Regulation and advises not to adopt such paralel legislation, because it unnecessarily complicates the procedure of modification and amendment and can lead to inconsistency of the national with the Community law (Commission of the European Communities, 2007b).

Legal significance of the Regulation is multiple: first of all, mutual classification of territorial units aimed at gathering, composition and publishing of harmonised regional statistical data in EU has been standardised; three-stage hierarchical

structure of division and unique identification of economic territories of EU member countries has been determined (NUTS 1, NUTS 2 and NUTS 3); EU member countries have been given a possibility of establishing also lower, more detailed hierarchy levels by further division of NUTS 3 level; normative and analytic criteria of classification have been identified; procedure of modification and amendment of classification has been standardised. The Regulation has encompassed all 15 EU countries that were members at the time.

Continuance of European integration process had also demanded standardisation of territorial units' classification of the newly accepted EU member countries. By the Regulation of the European Parliament and Council No. 1888/2005 dated October 26th 2005, relevant modifications and amendments of the 2003 Regulation have been conducted in relation to ten newly accepted countries, which have joined European Union on May 1st 2004 (Commission of the European Communities, 2005). Relevant regulation concerning Bulgaria and Romania, which have joined European Union on January 1st 2007 still has not been adopted. Regulation No. 105/2007 dated February 1st 2007 amendments of Regulation No. 1059/2003 have been modified and amended, so they have shown territorial statistic units of 25 EU members in a unique amendment (Commission of the European Communities, 2007a).

For the purpose of implementation of Regulation No. 1059/2003, on January 8th 2008, EU Commission has adopted Regulation No. 11/2008 (Commission of the European Communities, 2008). This implementing Regulation provides obligation of the EU member countries to submit time series data which relate to territorial units NUTS 2 and NUTS 3 in their composition to EU Commission. Fields on which statistical data relate to (for instance, agriculture, demography, regional accounts, household accounts, education, etc.), as well as the starting year for which this Regulation is to be applied for, have been specified by the Annex.

Methodological problems

Usage of current OECD methodology for classification of NUTS 3 regions in EU creates two types of problems which complicate territorial comparability within EU. The first problem is related to large variations in the area of local administrative unit of level 2 (LAU 2). The second distortion occurs due to big variation in the size of NUTS 3 region and in certain countries it is common to divide (small) city center from surrounding regions (Eurostat, 2010).

According to the OECD methodology, there are two basic steps in typology defining:

- defining of rural local administrative unit of level 2;
- classification of the regions based on the population portion in rural LAU 2, where population density below 150 inhabitants per km² is defined as rural.

According to the same methodology, regions can be defined as predominantly urban or predominantly rural, depending on the percentage of the population living in local rural communities (see more on Eurostat, 2010). Bearing that in mind, OECD methodology classifies NUTS 3 regions as:

- predominantly urban (PU), if the portion of population living in rural LAU 2 is below 15%;
- medium (U), if the percentage of population living in rural LAU 2 is between 15 and 50%;
- predominantly rural (PR), if the percentage of the population living in rural LAU 2 is higher than 50%.

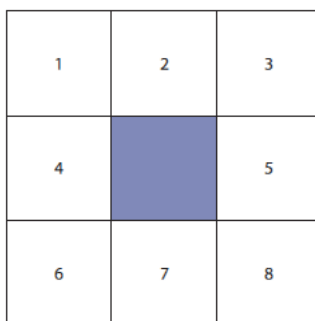


Figure 2. Contiguous grid cells (Eurostat, 2010)

In order to solve this problem, according to new OECD methodology, it is assumed that population density is 300 inhabitants per km², it is applied to cells network of 1 km² and minimal size of territory must encompass 5 000 inhabitants (Eurostat, 2010). This recommendation of OECD methodology will become a standard and can easily be applied in the countries not belonging to EU. Also, this approach enables balanced distribution of population (Figure 2).

Possibility of NUTS application in Serbia

According to NUTS 1 classification, regional division is theoretically possible in Serbia. Having in mind that NUTS 1 classification purports territories of 3 to 7 million inhabitants in size, Serbia could only theoretically be divided into two regions: Northern and Southern Serbia. Northern Serbia would include Vojvodina and Belgrade, whereas Southern Serbia would include Šumadija and Western Serbia and Southern and Eastern Serbia, as well as Kosovo and Metohija (Table 3).

Table 3. Regions in the Republic of Serbia according to the NUTS 1 classification

Region	Area (district)	Area km ²	Number of settlements	Population
North Serbia	Grad Beograd	3205	157	1630582
	Severnobački	1784	45	192118
	Srednjobanatski	3256	55	193067
	Severnobanatski	2336	50	153708
	Južnobanatski	4282	94	300874
	Zapadnobački	2420	37	195573
	Južnobački	4022	77	607282
Southern Serbia	Sremski	3487	109	325734
	Zlatiborski	6148	438	296858
	Kolubarski	2466	218	180293
	Mačvanski	3275	228	310839
	Moravički	3036	206	215422
	Pomoravski	2616	191	216186
	Rasinski	2660	296	244241
	Raški	3914	359	299155
	Šumadijski	2368	175	289496
	Borski	3505	90	132464
	Braničevski	3855	189	189556
	Zaječarski	3600	173	124423
	Jablanički	2770	336	227116
	Nišavski	2723	282	374017
	Pirotski	2763	214	95861
	Podunavski	1223	59	203118
	Pčinjski	3526	363	228254
Toplički	2230	267	94570	
Kosovski	3117	393	/	
Kosovsko-mitrovački	2050	335	/	
Kosovsko-pomoravski	1412	184	/	
Pećki	2450	317	/	
Prizrenski	1910	220	/	

Source of data: Statistical Office of the Republic of Serbia and Republic Geodetic Authority (as of 12/31/2009, except for Kosovo and Metohija, condition of 12/31/1998)

Such theoretical regionalization might only be able to fulfill normative approach of the institutional region defining, according to Eurostat principles, with the assumption that there is a political will for such approach (which is highly unlikely at the moment). On the other side, being more realistic, functional approach can be fulfilled in very difficult way due to analytic demands of socio-economic criterion. Having in mind these restrictions, we can assume that NUTS 1 classification of the regions in Serbia is not applicable in the current institutional framework. Also we can emphasize that Serbia as a whole can not be defined as NUTS 1 region because it exceeds the limit of 7 million inhabitants, and within its borders it doesn't have territory which can be recognized (from either historic or socio-economic criterion) as one of European regions (unlike some European countries which fulfill this criteria, such as: Czech Republic, Denmark, Ireland, Cyprus, Lithuania, Latvia, Luxembourg, Malta, Slovenia and Slovakia).

NUTS 2 classification encompasses territory of 800 000 to 3 000 000 inhabitants and represents formal division of the regions in Serbia. According to official regional division, Serbia consists of 5 NUTS 2 regions: Belgrade; Vojvodina; Šumadija and Western Serbia; Southern and Eastern Serbia; Kosovo and Metohija. Many authors and the public present their models of regionalization of Serbia taking into account numerous criteria (factors), which are specific for presented models. Even though there is no consent on the number of regions in Serbia or on the districts which should be their integral parts, there is a general standpoint that regions in Serbia should be determined based on NUTS 2 classification.

Table 4. Regions in the Republic of Serbia according to the NUTS 2 classification

Area (district)	Area km ²	Number of settlements	Population
Belgrade	3205	157	1630582
Vojvodina	21587	467	1968356
Šumadija and Western Serbia	26483	2111	2052490
Southern and Eastern Serbia	26195	1973	1669379
Kosovo and Metohija	10939	1449	/

Source of data: Statistical Office of the Republic of Serbia and Republic Geodetic Authority (as of 12/31/2009, except for Kosovo and Metohija, condition of 12/31/1998)

Would Serbian territory in the future be divided into five or seven NUTS 2 regions? Would statistical regions, meaning Euro regions, in Serbia have administrative territory? When would the regions gain legal personality? According to Zarić and Vuković (2010), these are only some of the questions which have significant media coverage in Serbia. Scientific approach also becomes part of the discussion. Considering process of regionalisation necessary

for the point of more adequate development and more effective management, these authors (Zarić & Vuković, 2010) point out the possibilities of competitive development between the regions, as well as creation of regional forms of bussiness environment, which would be more favorable from the point of bussiness activities.

Table 5. Areas (districts) in the Republic of Serbia according to the NUTS 3 classification

Area (district)	Area km ²	Number of settlements	Population
Grad Beograd	3205	157	1630582
Severnobački	1784	45	192118
Srednjobanatski	3256	55	193067
Severnobanatski	2336	50	153708
Južnobanatski	4282	94	300874
Zapadnobački	2420	37	195573
Južnobački	4022	77	607282
Sremski	3487	109	325734
Zlatiborski	6148	438	296858
Kolubarski	2466	218	180293
Mačvanski	3275	228	310839
Moravički	3036	206	215422
Pomoravski	2616	191	216186
Rasinsko-Toplički	4890	563	338811
Raški	3914	359	299155
Šumadijski	2368	175	289496
Borsko-Zaječarski	7105	273	256887
Braničevski	3855	189	189556
Nišavski	2723	282	374017
Pirotsko-Jablanički	5533	550	322977
Podunavski	1223	59	203118
Pčinjski	3526	363	228254
Kosovski	3117	393	/
Kosovsko-mitrovački	2050	335	/
Kosovsko-pomoravski	1412	184	/
Pečki	2450	317	/
Prizrenski	1910	220	/

Source of data: Calculated by the authors based on data of Statistical Office of the Republic of Serbia and Republic Geodetic Authority (as of 12/31/2009, except for Kosovo and Metohija, condition of 12/31/1998)

According to NUTS 3 classification, regions mean territory of 150 000 to 800 000 inhabitants' size. Majority of districts in Serbia are close to lower inhabitants' limit of the NUTS 3 classification and can satisfy these conditions, apart from districts of Bor, Zaječar, Pirot and Toplica. Therefore, these districts have to be presented as Bor-Zaječar District, Pirot-Jablanica District and Rasina-Toplica District within NUTS 3 classification, having in mind territorial distribution of these districts. Besides that, previous four districts correspond to LAU 1 classification, even though territorially they encompass either the same

or even wider area in relation to some other districts which fulfill NUTS 3 criterion (Table 5).

Conclusion

Current institutional framework in Serbia, for the given geographic, socio-economic and political conditions, mostly corresponds to regions of NUTS 2 category. Such classification is most satisfactory for the principles of European Statistics (Eurostat, 2007) and expresses the will of most of the authors and the public about various models of regionalisation of Serbia. Still, there is no agreement about the number of those NUTS 2 Euroregions Serbia should have. Led by political, national, economic or some other goals, the public (both expert and political one) emphasises the importance of the regional division based exactly on some of these goals. Therefore, Serbia is often mentioned as Serbia with 5, 6, 7 or even more NUTS 2 regions. Compared to NUTS 2 classification, NUTS 1 and NUTS 3 classifications are less applicable: NUTS 1 due to inappropriate institutional support and the lack of political will; NUTS 3 due to high regionalisation expenses and current problems regarding the amount of public expenditures in Serbia. Besides, many neighbouring districts in Serbia are similar based on their characteristics or they don't fulfill NUTS 3 criterion (Bor, Zaječar, Pirot and Toplica districts).

Bearing in mind Serbian efforts to become EU member, but also to use many funds and other means of EU assistance (starting with pre-accession ones), the significance of NUTS classification's implementation in Serbia is large. Even with ignoring economic-political support of EU, Eurostat methodology (Eurostat, 2010) represents good solution for regional division of Serbia.

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