Classifications of the Rural Areas in Bulgaria

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A B S T R A C T

There is a great diversity of classifications of the rural regions and of the corresponding methods in use. This can be taken as an advantage because it allows the most appropriate and suitable classification for the chosen task to be used in the survey. Otherwise the diversity of classifications makes the comparison difficult at international level, as well as at the regional one. In this report there are discussed the approaches, the methods and the corresponding classifications of the rural regions, which can be conditionally divided into two groups. The first group includes those used by the international organizations, yet also used in Bulgaria. The other comprises methods elaborated by the Bulgarian scientists, independent or research groups, which takes into consideration some peculiarities of our conditions. We emphasise on the OECD methodology and its application in the mapping of rural areas in Bulgaria. The new European classification is also examined. The main purposes are discussed and the results from the application of new classification in the European Union are reviewed in depth. It is shown how this new classification is reflected in the mapping of rural areas in Bulgaria in comparison with the existing OECD approach.

1. INTRODUCTION

For the planning and implementation of the policy for rural areas in one country, respectively in the EU, it is logical first to determine which areas are rural and which remain outside the scope of the policy. Classifications of European rural regions exist from the 1970s [2]. Since then there is considerable diversity of classifications used for the division of territories and relevant methodologies according to which are made. On one hand this can be seen as an advantage because it allows choosing a classification that is the most appropriate and consistent with the specific purposes of the study. On the other hand, the numerous classifications make the comparison both internationally and nationally very difficult.

2. THEORY AND METHODOLOGY

Our study is based on classical scientific methods - a comparative analysis was applied by the review of some of the existing classifications of rural areas. It emphasizes on the methodology of the OECD classification of rural areas in Bulgaria. It is also used official statistics and the corresponding methods of its processing.

Our analyses reveal some discrepancies in the use of indicators at various stages of classifications of rural areas and in their implementation on the local and the regional levels. We adduce the relevant evidence and formulate two proposals for their elimination.

3. RESULTS AND DISCUSSION

3.1. Classifications of the rural areas used in Bulgaria

Different approaches and methods are used for the classification of rural regions, which may commonly be grouped as follows: methods, which use only demographic indexes and methods, handling a variety of indicators, among which prevail the socio-economic.

In the first group are included two methods. The first one is developed by OECD (Organization for Economic Cooperation and Development). It is created for the preparation of international comparison of the rural regions in Europe. It is applied on two levels - local and regional. It will be analyzed in details in p.3.3 in this paper.

The second method of this group is known as the method of EUROSTAT and is based on two indexes: number of population in the region and population density. Three groups of regions are also defined but with other names and with the following borders of the indexes between them:

Highly populated regions - the total population of the municipality is at least 50 000 inhabitants, and the density is over 500 people per sq km.

Intermediate regions - the total population of the municipality is at least 50 000 inhabitants, and the population density is over 100 people per sq km. The municipality should be near to a highly- populated region.

Regions with low population density - the total population of the municipality is less than 50000 inhabitants, and its density is under 100 people per sq km. The municipality is not near to a highly populated region.

Only the municipalities which are in the group of low populated regions are defined as rural regions. If one municipality has not reached the necessary level of population density but is situated between highly populated and intermediate regions, then it is defined as intermediate region [1].

The application of this method in Bulgaria is difficult due to the high figures the indexes connected with population density as well as to the condition that the low populated areas i.e. rural ones cannot be situated next to highly populated areas. They can be only intermediate. The actual situation in Bulgaria, however, is different. The urban territories which are highly populated and highly urbanized usually are surrounded with low populated territories.

In 1999 an equalization of the methods for classification of the rural regions between OECD and EUROSTAT was achieved. According to the common methodology, main criterion in determining the rural area is the population density (till 100 people per square kilometer). This index is used only at local level – municipality (LAUI). For the regional level (NUTS-III и NUTS-II) is adopted the option of OECD: exceptionally rural, predominantly rural and predominantly urban regions without change in the quantity parameters.

Methods based entirely on demographic indexes have universal character. From a statistical point of view they are well secured, which makes them widely applicable and popular.

The second group combines methods, which use not only demographic, but also socio-economic indexes such as employment, branch structure of the economy etc. They use different methods. Only one of them is developed particularly for the classification of rural areas [5]. Later it is improved and supplemented by another author [6]. The rest are methods, according to which is done the classification of municipalities in Bulgaria, regardless of whether they are rural areas or not.

3.2. Some definitions related to the basic units for the classification

The EU has areas based on different typology, basic characteristics, purpose, functions, etc. Even greater is the variety of indicators and criteria for differentiating them.

This leads to complex results when comparing data. Therefore, one of the problems to be considered is the choice of basic units for the classification.

In different international studies on urban and rural areas a system of comparable spatial units is defined. These units were defined in such a way that a system includes cities together with the surrounding suburban zones.

Further, the basic spatial units used in the classification of urban-rural areas in the EU, are defined.

Nomenclature of Territorial Units for Statistics (NUTS). The NUTS classification established by Eurostat is a system for dividing of the economic territory of the European Union (EU) for statistical purposes. It is based on the existing national administrative subdivisions. There are three hierarchical levels of territorial units for each EU member country:

- NUTS 1: major socio-economic regions;
- NUTS 2: basic regions for the application of regional policies;
- NUTS 3: small regions for specific characteristics.

For example, Bulgaria has (table 1) two regions in the level NUTS 1 – Northen and West-easten Bulgaria and South-western and South central Bulgaria;

Table 1. NUTS classification for Bulgaria.

Countries	NUTS 1	NUTS 2	NUTS 3
EU members 27	97	271	1303
Bulgaria BG	Regions 2	Planning regions 6	Districts 28

6 planning regions in the level NUTS 2 (north-western, north – central, north-eastern, south-eastern, south-western and south central) and 28 districts wich are NUTS 3 (fig. 1).

Local administrative units. Eurostat uses a system of Local Administrative Units (LAUs) for statistics at local level.

These are lower level of territorial-administrative structure of the country and the main components of the regions of first, second and third level (or NUTS) in the EU.
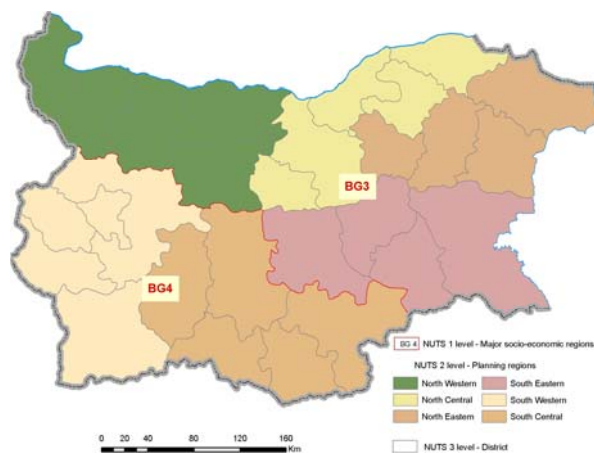

Fig. 1. NUTS classification for Bulgaria.

For each EU member country, two levels of Local Administrative Units are defined. The first administrative levels are municipalities or communes (LAUs 1) and the second are settlements with their lands (LAUs 2) (table 2).

Table 2. LAU classification for Bulgaria.

Countries	LAU 1	LAU 2
EU members 27	8397	121601
Bulgaria BG	Municipalities 264	Settlements 5329

3.3. Review of the OECD methodology for the classification of rural regions

The methodology for classification of rural areas of the OECD is among the most commonly used methods for these purposes.

The purpose is to define classes of the regions which show similar spatial and other characteristics.

The OECD methodology is applied to the next two levels:

- a local administrative level (LAU 1 и LAU 2);
- a regional level (NUTS 3).

Classification at local level. This classification is based on the population density in the settlements or Local Administrative Units level 2 (LAU2) that belong to a commune.

Rural areas are defined as communes with a density population below 150 inhabitants per square kilometre.

This criterion is easily applicable but it is possible to obtain some unexpected results connected with the large variation of used administrative units.

It is well known that the population density as depends on both the number of inhabitants of the settlement and on the size of the village territory. The differences in the size of the territory between the villages in Bulgaria are very high. The size of the territory is determined mostly by the nature of the relief. For example, in the Danube valley the villages have large territories, due to flat or flat and hilly terrain. In the structure of the utilized agricultural area dominates the farmland and this leads to lower values of the average population density, even in villages with high number of inhabitants. The communes are categorized as rural and this is of an advantage because they can be beneficiaries based on the measures and axes of the Programme for Rural Development by applying for subsidies as farmers. Logically, the largest villages in Bulgaria based on the number of inhabitants are located exactly in the Danube Valley and the Upper Thracian Valley. However if it turns out that the village territory is small, because part of it is in the boundaries of land with the status of some form of the conservation protection (reserve, national park), this immediately leads to increased population density and it may exceed a fixed threshold of 150 peoples/km². Therefore, the relevant settlement may be categorized as an urban region instead as a rural what actually it is. The problem is exacerbated further when it comes to mountain areas. There are observed two extremes. Many villages located in mountainous regions in Bulgaria have small territories. The reverse situation is possible. This happens with some cities in the mountains which have large territories with predominantly forests. However these forests are very often part of the national forest fund. So when such a classification is made the type of the settlement in the national classification of the settlements must be taken into consideration. The type of settlement should not be replaced and should not be influenced by other parameters. This immediately leads to another important change, namely to be possible to separate the administrative centre of the administrative unit from the rest of its territory in such classifications in the cases when they are sufficiently different and these differences are discernible. In the practice, some countries separate the city centre from the surrounding region.

Classification at regional level. At regional level the OECD definition distinguishes three main groups of regions (OECD, 1994, 1996):

- predominantly rural regions: more than 50% of the region's population live in rural communes;
- intermediate regions: between 15% and 50% of the population lives in rural communes;
- predominantly urban regions: less than 15% of the region's population lives in rural communes.

The second discrepancy is associated with the higher level in the hierarchy of administrative units - districts (NUTS 3) and mainly affects those with border geography. It has been proven that these areas in Bulgaria are the most heavily affected by the processes of desertification. Their population steadily migrated from villages to cities of the same areas and even beyond, to the largest cities in the country. Therefore many of the villages are completely deserted and the population is concentrated mainly in urban areas. Thus the share of rural population is very low, respectively urban population - high. So the district can be defined as a predominantly urban area, although its population is engaged in activities of the agrarian economy and derives income from them. Typical examples are the three areas of north-western Bulgaria - Vidin, Vratsa and Montana. Therefore, we believe that the using of only one indicator/criterion is not sufficient to determine the type of the administrative-territorial unit.

Application of the size criterion for urban centres. For elimination of the second type of deformation it is proceed to the application of the third criterion that is based on the size of the urban centres contained in the districts (NUTS 3 regions). After the implementation of steps 1 and 2 the districts are classified as:

- a "predominantly rural" region is re-classified as "intermediate" if there is an urban centre > 200.000 inhabitants representing at least 25% of the regional population;

- an "intermediate" region is re-classified as "predominantly urban" if there is an urban centre > 500.000 inhabitants representing at least 25% of the regional population.

3.4. The new EU classification based on a population density grid

The new European Union classification has been developed by four different European Commissions. It is also based on the OECD methodology that was previously considered and classifies the regions as 'predominantly rural', 'intermediate' or 'predominantly urban'. It differs from the older OECD methodology in that is uses more accurate distribution of the population to classify different types of regions (LAUs and NUTSs).

For classification of the regions, the commune is selected as basic territorial unit. For a more precise characterization of the commune should take into account population density inside the commune and neighbouring communes. For this purpose, urban clusters are defined, without using the administrative boundaries of communes.

The classification on the local level uses a population density grid with cells size of one square kilometre resolution and land cover data. The method creates urban clusters with a minimum population

density of 300 inhabitants/square km and a minimum population of 5000 inhabitants. All grid cells that do not satisfy this condition are classified as rural.

The classification of the regional level (NUTS 3 regions or districts) is based on part of the population in cells that are classified as rural. On this basis the rural/urban classification of communes with a population density grid cells, the OECD distinguishes three main categories of regions with the next thresholds:

- if the rural population is more than 50% of the total population in rural grid cells of the region, it is defined as rural;

- between 20% and 50% in rural grid cells as intermediate;

- less than 20% - predominantly urban.

The threshold of 20 % instead of 15 % leads to a change of the classification of regions in comparison with the previous OECD methodology. Some regions are classified as predominantly urban rather than intermediate. This classification groups NUTS 3 regions that are smaller than 500 km² also. After applying this new approach, the results obtained from Eurostat for EU (27 countries) show the following [8]:

- the classification of the rural/urban regions on the basis of grid cells with size 1km² and real census data is used for Denmark, Sweden, Finland, Austria and The Netherlands;

- for the remaining EU Member States is used a population density grid based on the Local administrative units level 2 (the settlements with their land) and CORINE land cover data;

- for LAU2 classification the result is: 28% of the population living in rural areas;

- for NUTS 3 regions classification the result is: 24% of the EU population living in NUTS 3 regions classified as "predominantly rural".

The map on fig. 2 is created on the basis of Eurostat data and presents the new classification of the rural regions in Bulgaria on the districts level (NUTS 3 regions).

Fig. 2. A new urban - rural classification for districts (NUTS 3 regions) in Bulgaria *(source: European Commission (DG REGIO and DG AGRI).*

Interesting investigations for the determination of rural/urban areas are made [3] on the basis of different criteria: a proportion of agricultural land, land cover, artificial area, influence of urban agglomeration to a commune and so on. All of them produce different results.

3.5. Mapping the rural/urban areas in Bulgaria

The criterion on local level is only one: population density. As we saw in the review of region classifications, the OECD defines as a rural region a commune if the population density is below 150 inhabitants per km2. This norm is applied for the determination of the rural communes in Blagoevgrad district. The example with district Blagoevgrad confirms some inconvenient effects of this definition.

The population density calculated for each territory of the settlement (LAU2) gives uncertain results. For example, according to the threshold for density defined by OECD, two villages (Belo pole, Riltsi) from Blagoevgrad municipality should be considered as towns while from the municipality of Bankso the town of Bansko should be classified as village.

Such inaccuracies are evident in all communes of the Blagoevgrad districts. A total of five towns that are community centres (Bansko,Belitsa, Kresna, Razlog, Hadzhidimovo) have density below 150 inhabitants/sq km, and 11 villages - more than 150 inhabitants/sq km. (fig. 3).
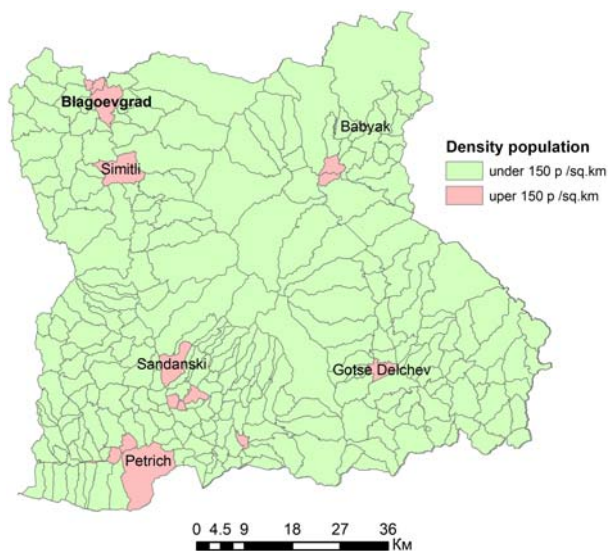

Fig. 3. The original OECD urban-rural classification for the land of the settlements (LAU2) in Blagoevgrad district.

On the other hand, the calculated population density for all communes (LAU 1) in district Blagoevrad is below 150 inhabitants per km² and this determines them as rural communes. The main cities of the region are also part of rural areas because their communes include wide areas of woodland and alpine areas of Rila and Pirin mountains.

If we include in the calculation only the populated territory instead of the whole settlement territory the results will be different and are shown in figure 3. These examples illustrate the disparities discussed in section 3.1. of this report.

Application of OECD methodology at regional level (NUTS 3 regions). The application of OECD methodology leads to distinction of tree groups of regions into Bulgaria, according to the part of the rural population from regional population. In the approach that we propose here the communes and districts are used as classification units too (NUTS 3), but their distribution of urban and rural population that *does not depend on administrative boundaries* has a major role.

The map shown on fig. 4 is created on the basis of the census during 2011.

Real urban and rural values for districts are used and the thresholds for the typology: 50% and 15% of the regional population.

The results for the tree groups of regions are:

- predominantly urban regions: Sofia (capital) region falls into this group only;

- intermediate regions (relatively rural): The most districts (NUTS 3 regions) in Bulgaria fall Into this group;

- predominantly rural regions: Into this group Silistra, Razgrad and Karzhali are included.

The compilation map has obvious differences compared to the Eurostat map 15.2 from (European Union, 2010). The regional classification depends on the part of rural population from the total for the region. As we saw in the first step the determination of the rural areas based exclusively on the density population is not precise enough. As a result these results deform and classify on on regional level.

Fig. 4. A classification of urban-rural areas for districts (NUTS 3 regions) in Bulgaria by the original OECD methodology with data from Census 2011.

4. CONCLUSION

In the approach, that OECD applies into its methodology for classification of the rural regions, the commune is selected as basic unit.

The experience so far has shown that it is the most sustainable territorial-administrative unit in Bulgaria and as such represents the most realistic choice for policy application for region development.

Probably it is impossible to specify an universal and absolutely objective criterion for the classification of an administrative unit such as the rural area.

Each method requires a choice of thresholds that is subjective to a certain degree.

A good method should be flexible, so that a potential user can easily apply thresholds for the user's specific needs.

The concept of "rural area" is connected also with several socioeconomic aspects, such as structure of the employment, population age structure. Unfortunately these data are difficult to collect at the commune level for EU.

The Eurostat study [2] is based only on the population density, the share of rural population from population living in region and land cover.

We consider that it is very important while making such classifications to be possible to separate the administrative centre from the administrative unit at the borders of the land from the remaining territory.

So they can fall into different categories of the classification scheme in the cases when there are differences between them and can be given adequate existing policy that will assist in solving these differences.

The regions classification on the basis of socioeconomic development and their resource potential will cooperate for their analysis will help for precise definition of the problems and will allow the elaboration of realistic strategies for their realizing. Therefore a system with criteria is needed for region classification suitable for the Bulgarian circumstances.

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