

## AN EXPLORATORY RESEARCH ON RURAL AREAS ACCORDING TO NUTS CLASSIFICATION, IN TWO NEIGHBORING COUNTRIES: ROMANIA AND BULGARIA

Valentin-Cosmin SĂRĂCIN<sup>1</sup>, Ilona-Elena-Cristina ȚÎRCĂ<sup>2</sup>, Lucian CONSTANTIN<sup>1</sup>

<sup>1</sup>The Bucharest University of Economic Studies, 6 Romania Square, District 1, 010374, Bucharest, Romania, Email: saracin\_valentin@yahoo.com, ll.ctin@gmail.com

<sup>2</sup>University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Marasti Blvd, District 1, Bucharest, Romania, Email: t.elenailona@yahoo.com

**Corresponding author:** saracin\_valentin@yahoo.com

### Abstract

*This exploratory research is based on statistical data about some indicators for the context of rural development, from different countries of EU, but also it is a comparative study of speciality literature regarding sustainable development and rural development, in two neighbouring countries: Bulgaria and Romania. The research is based on a methodology that involves the use of statistical data on leading indicators for the rural development context, from two neighbouring countries, Romania and Bulgaria. By analysing economic indicators we found that in some countries there are large discrepancies between urban zones and rural zones. This discrepancy between rural zones and urban zones is confirmed by environmental indicators, which still have positive influences on other fields, in which there was a positive evolution. Both Romania and Bulgaria, the two countries used in this study benefit from varied tourism resources, both natural and anthropogenic, insufficiently developed and exploited. Through these they can develop rural areas, opting for the development and support of rural tourism, the diversification of the rural population, in order to create new non-agricultural activities as a result of exploitation of the agricultural sector, with implications for increasing the number of jobs and increasing of the employment rate among the rural population.*

**Key words:** Romania, Bulgaria, sustainable development, rural zones development, NUTS 3

### INTRODUCTION

The sustainable development, according to different specialists, involves combining and using all resources, forms and development activities, both at the social and economic level and respecting the principle of balance between the aspects and social, economic levels and environmental protection. [2]

A certain report formulated by the World Commission on Environment and Development (WCED), mentions the fact that „sustainable development envisages the achievement and solving of current needs without hindering and restricting future generations to solve their own needs in the future”.

Sustainable development aims to create a stable context in which relationship between man and environment is ensured, taking into account both environmental protection, and economic and social factors. Initially this development aimed at solving the problem

caused by the increasing industrialization of resources, which was having negative implications on the environment. Throughout its evolution, the sustainable development expanded, aiming now the importance of the quality of life, protecting the environment, and in terms of social and economic factors, pursuing just relationships and between states and not only between current generations but between future generations as well.

The concept of rural zones development is a very important concept nowadays, being a subject of high importance because it is viewed throughout a whole, according to its territorial and sectorial sizing, and also in terms of reaching this concept in all phases and activities undertaken at the country level. This generic concept, includes one of the most important activities, namely rural development, which is considered the most important and basic development of this concept of rural development, through attention and importance are given to the

development of agriculture as a major player in admitting the importance of land in the socioeconomic context, for developing a standard of living higher than the existing one. [3]

The generic concept of rural development involves combining all economic, social and environmental factors in the territories, but also designing and supporting optimal governance across these territories.

The concept of rural development is a set of measures and actions integrated and dedicated, which aims to ensure and increase the quality of life of rural people, aimed at protecting the environment, in terms of natural and cultural resources, thus ensuring the sustainable development of rural zones, in accordance with their specific resources. The national program of rural development, has among its objectives, at the level of any country, depending on the specific needs of rural areas in each country, the agriculture development, infrastructure development, rural tourism development and agro tourism and also the supporting of entrepreneurial environment in rural zones, by the creation and establishment of new enterprises in order to create new jobs, all these being in accordance with the protection of the environment and education of people in this sense and the development within these sectors.

This research started on the report from 2013 that contains statistical and economic effects on rural zones development in the EU, drafted by the European Commission, which examined the objectives and the important criteria that were the basis for coordination, monitoring and evaluation of rural development policies for period 2007-2013, analyzing the situation in the rural zones, according to social factors and economic factors.

The Common Agricultural Policy (CAP) includes two important pillars like rural development policy, which entails the use of integrated structural measures for rural zones development and the politic of common market organizations, which entails using integrated measures to regulate transactions and the proper functioning of the market in

products farm. By rural development policy are indicated solutions to specific needs identified in the rural areas. [4]

As a result of these instructions have been adopted a series of 22 integrated measures, which take into account the specific needs identified in the European Union countries, measures that will be implemented in the new exercise 2014-2020.

The goal that is intended to be achieved in the period 2014-2020 was based on three objectives such as increasing competitiveness among agriculture and forestry, increasing environmental protection, improvement of rural areas and increasing the quality and duration of life of people from rural zones even encouraging and supporting them to diversify towards non-agricultural activities. After the end of the 2007-2013 periods, the European Commission has designed, developed and adopted a new regulation of a particular importance in order to sustain the rural environment and the sustainable development of rural areas in member states of the European Union).

## MATERIALS AND METHODS

The European Commission indicates a classification at the level of the member states, for the territorial statistical units in order to collect the data necessary for the preparation and publication of a regional analysis at EU level. This nomenclature is called NUTS.

The indicators used in this paper were processed by the Canadian Council of Ministers of the Environment (CCME), and are considering measuring the importance of the social and economic level, analysis of the types of rural areas (NUTS 3), sustainable development in the economic context and also the analysis of the economic structure, and an analysis with the purpose of developing rural areas which have tourism potential.

## RESULTS AND DISCUSSIONS

The analysis of the social and economic context from rural areas according to EU Rural Development Report 2013, prepared by

the European Commission, EU-27 is divided in terms of territory as follows: 51.6% of the territory is represented by rural areas, 38,4% of Europe's surface is represented by intermediate areas and only 9.9% of the surface is represented by urban areas.

An increase in terms of the surface and the importance of rural areas it can be seen, increasing from 49.8%, which represented the EU-15, at 51.6%, which represented the EU-27 in terms of total rural areas. Also, it can be seen an increase in population in rural areas from 18.1%, which represented the EU-15, at 22.6%, which represented the EU-27.

**Analysis of social and economic context**

*(i) Analysis of social and economic context in the rural areas in Bulgaria*

Bulgaria is a country in the Balkan Peninsula, bordering Romania in the north, with Greece and Turkey in the south and Serbia and Macedonia in the West.

Bulgaria has a population of over 7,153,784 inhabitants, of which 1,926,602 live in rural areas, according to data from the National Statistical Institute of Bulgaria on 31.12.2015. Bulgaria has a zone of 53.6% made up of rural zones, an area made up 45.2% of the intermediate zone and an area of only 12% made up of urban zones. At the same time, Bulgaria has a population of 38.5% residing in rural areas, 45.0% of population residing in intermediate areas and a population of only 16.5% residing in urban zones, according to the Report of EU Rural Development 2013 prepared by the European Commission.

National Statistics Institute of Bulgaria indicates that in 2015 the unemployment rate nationwide was 9.1%, compared to 10.3%, as it was in 2010 and the unemployment rate in rural areas was 15.1 % in 2015 compared to 15.6% in 2011 (Table 1).

Table 1. Unemployment rate and the employment rate in Bulgaria

Unemployment rate (for 15 years old and over) nationwide					
2010	2011	2012	2013	2014	2015
10.3%	11.3%	12.3%	12.9%	11.4%	9.1%
Unemployment rate (for 15 years old and over) in rural areas					
-	15.6%	16.9%	18.4%	17.6%	15.1%
Employment (for 15 years old and over) nationwide					
2010	2011	2012	2013	2014	2015
47.9%	46.6%	46.6%	46.9%	48.0%	49.1%
Employment (for 15 years old and over) in rural area					
-	35.8%	35.7%	35.6%	35.8%	36.6%

Also, the employment rate nationwide was 49.1% recorded in 2015 compared to 47.9% in 2010, while in rural areas, the employment rate recorded was 36.6% in 2015 compared to 35.8% in 2011) (Table 1).

The gross value added from the rural zones in Bulgaria in are represented by the tertiary sector in proportion of 52.0%, the secondary sector in proportion of 36.7%. The primary sector in Bulgaria represents a proportion of 11.2%, according to EU Rural Development report in 2013.

According to Eurostat, the agricultural sector in Bulgaria have a gross added value of 1,514,04 million in 2016 compared to 1355,65 million in 2010 (Figure 1).

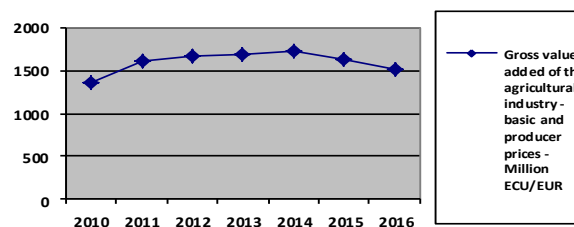


Fig. 1. The evolution of Gross value added of the agricultural industry in Bulgaria

In Bulgaria, among the most developed sectors are: tourism, agriculture, energy and heavy industry.

*(ii) Analysis of social and economic rural zones in Romania*

Romania has a population of over 21 million inhabitants. In terms of surface, Romania is the second EU country, first in terms of surface is Poland.

Romania has as advantages, compared to other EU countries, their natural resources (land and water), and human resources. However, these advantages has not lead to an optimal and superior development in terms of sustainable rural development and rural development. Even if it is not exploited enough, Romania registers a significant growth potential and a lot due to rural areas, which are important socially and economically. Romania has an area of 59.8% made up of rural areas, a total of 39.4% of the intermediate zone and an area of only 0.8% in urban areas.

At the same time, Romania has a population of 45.6% residing in rural areas, a population of 43.80% residing in intermediate areas and a population of only 10.5% residing in urban areas, according to EU Rural Development Report in 2013 developed by the European Commission.

The unemployment rate in 2015 nationwide, according to NIS in Romania was 5%, compared to 7%, as it was in 2010, while in rural areas the unemployment rate was 6.6% in 2015, compared to 4.8% in 2010. Also, the employment rate nationwide was 66.8% in 2015 compared to 59.6% in 2010 and in rural areas, the employment rate was 50.7% in 2015 compared to 53.4% in 2010 (Table 2).

Table 2. Unemployment rate and the employment rate in Romania

Unemployment rate (for 15 years old and over) nationwide					
2010	2011	2012	2013	2014	2015
7%	5.2%	5.4%	5.7%	5.4%	5%
Unemployment rate (for 15 years old and over) in rural areas					
4.8%	5.5%	5%	5.2%	5.3%	6.6%
Employment (for 15 years old and over) nationwide					
2010	2011	2012	2013	2014	2015
59.6%	59.6%	61.1%	60.9%	66.9%	66.8%
Employment (for 15 years old and over) in rural area					
53.4%	51.1%	52.4%	52%	51.7%	50.7%

Rural areas in Romania, in terms of gross value added, are represented by the tertiary sector in proportion of 46.5%, the secondary sector in proportion of 42.5% and the primary sector in proportion of 11.0%, according to EU Rural Development report in 2013.

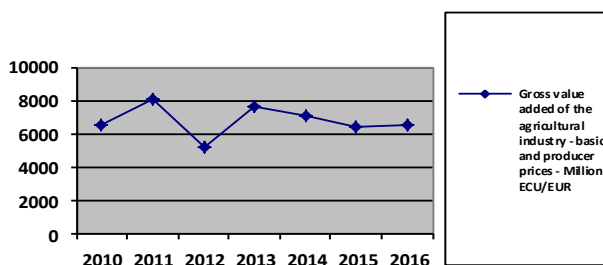


Fig. 2. The evolution of gross value added of the agricultural industry in Romania

According to Eurostat, in Romania the agricultural sector had a gross added value of 6,569.35 million in 2016 compared to 6,591.49 million in 2010 (Fig. 2).

Among the most important sectors in Romania we can mention the agro-food, energy and agriculture. Given the stage for development, Romania should point to a much higher productivity in agriculture and industrial sector, in close correlation with supporting the development of new jobs in non-agricultural sector to diversify agricultural activities.

**Importance and typology of NUTS regions from the rural – urban zones.**

NUTS aims subdivision of each Member State in three hierarchical levels, such as: NUTS 1, NUTS 2, NUTS 3. In 2015, NUTS was composed of 98 level 1 regions, 276 regions level 2 and 1342 regions level 3.

NUTS 3 classification is based on a methodology that uses the dispersion of the population reported to more than one square kilometer in the context of creating some networking groups in urban environments, where it meets a density of population of 300 places within a radius one kilometers square, totaling a population of 5,000 people. Over 50% of population lives in different zones witch are rural. Intermediate zone requires a population that lives in the area, between 20% and 50%. Predominantly urban areas are those networking groups in which a population lives less than 20% of its total (Table 3).

Table 3. Classification of rural zones, intermediate zones and urban zones - NUTS 3

Country	%Territory			%Population			%GVA			%Employment		
	Rural	Intermediate	Urban	Rural	Intermediate	Urban	Rural	Intermediate	Urban	Rural	Intermediate	Urban
Bulgaria	53.6%	43.2%	1.2%	38.5%	45.0%	16.5%	24.5%	35.4%	40.2%	32.5%	41.0%	25.5%
Romania	59.8%	39.4%	0.8%	45.6%	43.8%	10.5%	32.7%	42.1%	25.1%	41.8%	46.2%	12.0%
EU-27	51.6%	38.4%	9.9%	22.6%	35.1%	42.3%	15.6%	30.0%	54.4%	20.6%	33.9%	45.4%

Rural zones in Bulgaria occupie an area of 53.60% of the total territory. Predominantly rural zones in Romania occupie an area of 59.80% of the total territory and at the level of EU-27 rural zones occupie an area of 51.60% of the total territory. The share of population in rural zones, of both Romania and Bulgaria in this research is around the European average.

Also in Bulgaria a rate of 48.50% of the total population is located in rural zones. In Romania a proportion of 45.6% of the total population is located in rural zones, while in

the EU-27, a proportion of 22.60% of the total population is located in rural zones. Bulgaria and Romania registers a superior value compared with the average value from European level. The gross value added registered in Bulgaria in rural zones recorded a share of 24.50%, while in Romania it recorded a value of 32.7% and the EU-27 it records a value of only 15.60%.

As a result of this analysis, in both analyzed countries the percentage of gross value added in the most predominant rural areas, recorded a higher value than the average reported in Europe. We can see that Bulgaria meets a share of 32.5%, while in Romania it recorded a share of 41.80% and in the EU-27 recorded a share of 20.6%, in the context of the employed population located in the most predominant rural regions. In both countries studied, the percentage of people employed in the more rural areas, is high relative to the average European level.

### The Economic development

Gross Domestic Product (GDP) registered in the EU-27 70% in rural zones, 87% in intermediate zones. Also a percentage of 123% in urban areas. By this it can be concluded that urban zones registered the highest level. On the second place we can find intermediate zones and on the third place we can find the rural zones. At the level of Bulgaria, GDP recorded 28% in predominantly rural regions, a 35% in intermediate regions and a percentage of 103% in urban areas. In Romania, GDP recorded 33% in predominantly rural regions, 45% in intermediate regions and a percentage of 113% in urban areas (Table 4).

Table 4. The economic development expressed by GDP - NUTS 3

Country	Rural	Intermediate	Urban
Bulgaria	28%	35%	103%
Romania	33%	45%	113%
EU-27	70%	87%	123%

Through this analysis we conclude that the GDP in Romania and Bulgaria, registered in regions predominantly rural, in intermediate areas and in urban areas is below average recorded levels in EU-27 (Fig. 3).

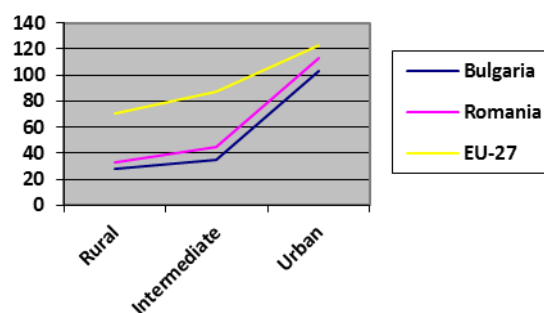


Fig. 3. Graphical representation of economic development expressed by GDP

### The economic Structure

Regarding the predominantly rural areas, it can be seen that the tertiary sector is dominant, registering a share of 52.0% in Bulgaria, accounting a share of 46.5% in Romania and an average of 64.6% at the European level.

Table 5. Structure of the economy expressed by gross value added - NUTS 3

Country	Rural			Intermediate			Urban		
	Primary sector	Secondary sector	Tertiary sector	Primary sector	Secondary sector	Tertiary sector	Primary sector	Secondary sector	Tertiary sector
Bulgaria	11.2%	36.7%	52.0%	5.9%	37.0%	57.2%	0.2%	18.4%	81.4%
Romania	11.0%	42.5%	46.5%	6.5%	47.0%	46.5%	0.3%	33.3%	66.4%
EU-27	4.4%	30.09%	64.6%	2.2%	29.1%	68.7%	0.5%	20.8%	78.6%

Also, the secondary sector ranks second, recording a rate of 36.7% in Bulgaria and in Romania a percentage of 42.5%, exceeding the average percentage values from EU-27, which is only 30.09%. Also, the primary sector ranks last with a rate of 11.2% in Bulgaria and a percentage of 11.0% in Romania, higher values than the ones recorded at the European level, an average percentage of only 4.4% (Table 5).

Regarding the intermediate areas, it can be seen that the third sector is that which prevailed at European level with a share of 68.7%, accounting for 57.2% in Bulgaria, while in Romania the tertiary sector is in second place with a share of 46.50%. Regarding urban area the tertiary sector is dominant with a value of 81.4% recorded in Bulgaria and a value of 66.4% registered in Romania, while the European average was recorded at a value of 78.6%. Also, in terms of economic structure, the

tertiary sector is followed by secondary and primary sector, both in the two countries in this study, as well as at the European level (Table 6).

Table 6. Evolution of economic structure expressed by gross value added, 2007-2010 - NUTS 3

Country	Rural			Intermediate			Urban		
	Primary sector	Secondary sector	Tertiary sector	Primary sector	Secondary sector	Tertiary sector	Primary sector	Secondary sector	Tertiary sector
Bulgaria	-0.3%	-2.8%	3.1%	-0.7%	-2.3%	3.2%	-0.1%	-1.9%	2.0%
Romania	-0.2%	4.7%	-4.5%	0.3%	5.4%	-5.7%	0.0%	2.8%	-2.8%
EU-27	-0.2%	-1.3%	1.3%	-0.1%	-1.1%	1.2%	0.0%	-1.7%	1.7%

According to EU - 27 it can be concluded that the regions predominantly rural, have registered a significant increase in the tertiary sector compared with the secondary sector, evolving blamed on the economic crisis held. In Bulgaria, can be seen an increase in the tertiary sector by 3.1%, while in Romania can be seen a decline in the tertiary sector by 4.5%.

**The services sector Evolution/Tertiary-NUTS 3**

Table 7. The analysis of services sector

Country	Gross value added and share of total GVA in tertiary sector - MS		Share of gross value added in tertiary sector (% total GVA) - NUTS 3		
	2012		2010		
	EUR billion (current prices)	% of total	Rural	Intermediate	Urban
Bulgaria	21.5	63.2%	52.0%	57.2%	81.4%
Romania	59.5	51.6%	46.3%	46.3%	66.4%
EU-27	8,467.1	73.4%	64.6%	68.7%	78.6%

According to statistics, the tertiary sector had a 73.4% share of gross value added at European level, while Romania had a share of 51.6% and in Bulgaria had a share of 63.2%, which means that both countries compared recorded values below the European average. Regarding predominantly rural areas, the services sector had 64.6% share of total gross value added in EU - 27, while in Romania have a share of 46.5% and 52.0% in Bulgaria, which means that the both countries compared to the European recorded below average values (Table 7).

Table 8. Evolution of services sector - NUTS 3

Country	Average annual growth rate of GVA in tertiary sector (in % points) - NUTS 3		
	2007-2010		
	Rural	Intermediate	Urban
Bulgaria	5.3%	7.1%	10.3%
Romania	-4.0%	-4.5%	1.6%
EU-27	0.8%	0.5%	0.2%

At Member State level it can be concluded that the regions predominantly rural, recorded a relatively small increase, with only 0.8%. In Bulgaria can be seen an increase in the services sector by 5.5%, while in Romania can be seen a decline in the tertiary sector by 4.0% (Table 8).

Table 9. Analysis of accommodations present in units with tourism accommodations function

Country	% of EU-27			%		
	2011					
	Rural	Intermediate	Urban	Rural	Intermediate	Urban
Bulgaria	0.6%	1.8%	0.2%	19.3%	76.1%	4.6%
Romania	1.0%	1.4%	0.3%	31.3%	61.1%	8%
EU-27	100.0%	100.0%	100.0%	32.2%	42.3%	25.3%

As it can be seen the share of accommodation units with functions of tourist accommodation at European level is higher (32.2%) in predominantly rural areas compared to urban areas share (25.3%). In Bulgaria, the share of accommodation units with functions of tourist accommodation is higher (19.3%) in the more rural areas compared to urban areas share units (4.6%). The same report, predominantly rural areas in favour, recounted in Romania, with a value of 31.3%, compared to a value of 8% for the urban areas.

Also, the share of accommodation units with functions of tourist accommodation in connection with to the total number at European level, we see that in Bulgaria there is an amount of 0.6% in predominantly rural areas, compared to a value of 0.2% in urban areas, while in Romania registers a value of 1.0% in rural areas compared to a value of 0.3% in urban areas (Table 9).

Table 10. Evolution of units of accommodation with functions of tourist accommodation - NUTS 3

Country	Bed places in tourist accommodations
	2007-2012
Bulgaria	13.0%
Romania	0.6%
EU-27	4.9%

Analysing the evolution of accommodation units with functions of tourist accommodation, it can be seen that it grew by

4.9% at European level. From this point of view in Bulgaria there was an increase by 13.0%, while in Romania it grew by only 4.9% (Table 10).

## CONCLUSIONS

Over time, rural areas were especially compared with agriculture, considering that as long as the agriculture develops, the rural area will develop. For some time, through various practical researches it was certified that rural development is influenced by the development of agriculture, but not in particular. Tertiary sector growth was achieved as a result of sustainable development, in close correlation with environmental protection.

Both Romania and Bulgaria, the two countries used in this study benefit from varied tourism resources, both natural and anthropogenic, insufficiently developed and exploited. [1]

Through these they can develop rural areas, opting for the development and support of rural tourism, the diversification of the rural population, in order to create new non-agricultural activities as a result of exploitation of the agricultural sector, with implications for increasing the number of jobs and increasing of the employment rate among the rural population. This way the living standards will rise.

Also, rural areas with potential agriculture development must be supported and exploited even by supporting employment among the primary sector.

Also, in areas with tourism potential, rich in natural resources, the development of this sector in the rural areas has to be produced in close correlation with the environment.

Organization and productivity growth in agriculture but also supporting the rural population to diversify their activities are clear and strategic objectives at European level, and in each growing country. Adoption of new measures and integrated actions to increase investments in accordance with protecting the environment, respecting and ensuring sustainable development in every step of these phases, facilitating and increasing products marketing to facilitate

selling are necessary and proposed solutions by the programs and policies adopted at European level for rural development.

## ACKNOWLEDGEMENTS

This research work was carried out with the support of National Statistical Institute of Romania and with the support of National Statistical Institute of Bulgaria.

## REFERENCES

- [1] Andrei R. D., Chiritescu V., 2012, „Aspecte privind relatia dintre ecoturism si dezvoltarea rurala durabila in Romania”, Vol. “Economia agroalimentara si dezvoltarea rurala in Romania. Implicatii ale Politicii Agricole Comune asupra securitatii alimentare”, Editura Academiei Romane, Bucuresti, pp. 601 - 609;
- [2] Branzan O., Csorba L., 2006, „Rural development”, The Commerce Magazine, No.7, pp.60-62;
- Rowley C, Richard B., Nigel L, Exploring Entrepreneurship, Oxford University Press, 2006, p. 183
- [3] Dobre I., Paicu C., 2007, „Development activities from rural environment”, The Tribuna Economica Journal, No.33, pp.82-83;
- [4] Voicilas D.M., Alboiu C.F., 2014, Applied EU quality schemes and organic products on Romanian Market. Economics of agriculture, Vol. 61, No. 2, Issue 2014- 06, Balkan Scientific Association of Agrarian Economists, Belgrade, 381-395.
- [5]\*\*\* Ministerul Agriculturii si Dezvoltarii Rurale, [www.madr.ro](http://www.madr.ro);
- [6]\*\*\* Institutul National de Statistica al Romaniei, [www.insse.ro](http://www.insse.ro);
- [7]\*\*\* Institutul National de Statistica al Bulgariei, [www.nsi.bg](http://www.nsi.bg);
- [8]\*\*\* Asociatia Natională de Turism Rural, Ecologic si Cultural, [www.antrec.ro](http://www.antrec.ro);
- [9]\*\*\* Rural Development in the EU, Statistical and Economic Information Report 2013.

