



RESEARCH OF THE RELATION "URBAN AGRICULTURE - RURAL ECONOMY"

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ABSTRACT

More and more companies are striving to provide fresh food production in the immediate vicinity of major cities, thus shortening the supply chain for the end user. According to FAO (Food and Agricultural Organisation), about 800 million people worldwide cultivate different crops in and around cities, which means that 20% of the world's urban population is in one form or another occupied in urban agriculture (1). Rural areas make up half of Europe's territory and employ around 20% of the population. (2). Due to this reason, the attention is drawn to the contrast between the urban agriculture and the rural economy. The aim is to explore and reveal the "urban agriculture - rural economy" relation. The methods of the present study are scientific research methods: comparative analysis method, induction and deduction method, retrospective analysis and others; illustrative methods - tables, figures and others. In terms of expected outcomes, this article focuses on highlighting the social, economic and environmental aspects of the emergence of the correlation between urban agriculture and the rural economy. The final part focuses on the challenges of the urban agriculture and the rural economy.

Key words: agrarian sector, agrarian economy, agrarian policy, agriculture, regions.

INTRODUCTION

The urbanization of the cities is characterized by an intensive population growth in those areas, with a density of construction and conversion of agricultural, forestry and other natural territories, accumulation of increasing quantities of waste, changes in the environment and others. These factors are indeed a prerequisite for their development from local to global problems. In order to overcome them, a solution is sought through the so-called urban agriculture. On one hand, the limitation of land as a resource, the food shortage, the climate change and other factors have an impact on stimulating its development.

The air pollution in urban areas, however, along with the scarcity of opportunities for "deploying" economically efficient

agricultural (mainly crop) production in them and other constraints raise the issue of the quality of the production, incl. the safety of its consumption.

On the other hand, the quest for reviving the rural economy is a prerequisite for developing economic levers and instruments to stop the process of depopulation, to limit the migration of local populations and other factors. In this respect, the development of non-agricultural activities in rural areas is also encouraged - sub-measure 6.4. Investments in non-agricultural activities of the Rural Development Program 2014-2020.

ADMINISTRATIVE TERRITORIAL DELEGATION IN THE EUROPEAN UNION

Regulation (EO) № 1059/2003 of the European Parliament and of the Council, accepted on May 26th 2003, establishes a common classification of territorial units for statistical purposes, the so-called Nomenclature of Territorial Units of Statistics or Nomenclature of Territorial Units for Statistics (NUTS).

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Its purpose is to establish a common European statistical standard of territorial units for the collection, compilation and dissemination of harmonized regional statistics in the Community (13).

With the accession of Bulgaria and Romania to the EU in 2007, Regulation (EO) No 176/2008 of the European Parliament and of the Council is accepted on February 20th 2008 for amendment of the applications to Regulation (EO) No 1059/2003, supplementing the classification of newly accepted Member States (14).

The changes since the last amendment of 2017 to the Regulation are limited to basic definitions and statistical criteria for harmonized and transparent legal recognition of territorial typologies at European and national level.

Each Member State is subdivided into three categories of regions (NUTS) and two levels of local administrative units (LAU). The main criterion for the classification of administrative units in a particular country is the number of population in that region - **Table 1**.

Table 1. NUTS level for an administrative unit

Level	Minimum	Maximum
NUTS 1	3 million	7 million
NUTS 2	800 000	3 million
NUTS 3	150 000	800 000

Source: www.europarl.europa.eu

For the purposes of the planning, programming, management, resource provision, monitoring and evaluation of the regional development in Bulgaria, the following areas (16) - **Table 2** are determined.

By 2027, the six NUTS 2 level regions in the country are preserved, despite the reported imbalances in the population, mainly in two of them - the Northwest and North Central region (17). According to statistical data (to 31 December 2016), the Northwest region is a population of less than 800 000 people (769 623), and North Central region is somewhat over the required minimum (805 441 crt) (18).

Table 2. National classification of the areas

Statistics zone (NUTS1)		Statistics zone (NUTS2)		Area (NUTS3)	
BG3	Severno i Yugoiztochna Bulgaria	BG31	Severo-zapaden	BG311	Vidin
				BG312	Montana
				BG313	Vratsa
				BG314	Pleven
				BG315	Lovech
		BG32	Severententralen	BG321	Veliko Tarnovo
				BG322	Gabrovo
				BG323	Ruse
				BG324	Razgrad
				BG325	Silistra
		BG33	Severoiztochen	BG331	Varna
				BG332	Dobrich
				BG333	Shumen
				BG334	Targovish te
		BG34	Yugoiztochen	BG341	Burgas
				BG342	Sliven
BG343	Yambol				
BG344	Stara Zagora				
BG4	Yugozapadna i Yuzhna tsentralna Bulgaria	BG41	Yugozapaden	BG411	Sofia (stolitsa)
				BG412	Sofia
				BG413	Blagoevgrad
				BG414	Pernik
				BG415	Kyustendil
		BG42	Yuzhentsentralen	BG421	Plovdiv
				BG422	Haskovo
				BG423	Pazardzhik
				BG424	Smolyan
				BG425	Kardzhali

Source: National statistical institute, NUTS version 2016, (www.nsi.bg)

URBAN AGRICULTURE - AN ALTERNATIVE FORM OF USE OF GREEN AREAS IN POPULATED PLACES

At present, 54% of the population lives in cities worldwide. It is expected that the rate of migration from the village to the city will reach 66-72% by 2050. In 1950, only 30% of the population was determined as "citizens". In Europe the urban population exceeds 73%. In Bulgaria, it is about 74% (3).

Urban farming is determined as a sustainable future especially for urban poor in developing countries. As a "production located in or near the outskirts of the cities that manufactures and distributes different types of food and non-food (plant) products" - a type of informal food supply system (4).

Urban farming is perceived as a socially meaningful activity which includes the cultivation of plants and animals for food in

urban and suburban environments, as well as the related processes such as processing, marketing of products, etc., which can be executed by individual or collective actors of municipal, state or private land, whether of a market or non-market nature, and provides both food and ecosystem, educational and social services and / or benefits as a product.

Urban and suburban farming is determined as a powerful and innovative method of enhancing public and institutional capacity and addressing the socio-economic isolation of vulnerable groups (5).

Urban farming is also seen as a way of preserving green areas in urban environments by adopting roof spaces for green roofs, street landscaping, landscaping of parks, patios and ecological corridors.

The development of urban agriculture uses "zero areas" for food production, or so-called "Z-Farming". As such, roof spaces ("living roofs"), facades and suitable premises within buildings are defined. The aim is to grow vegetation on is considered "lost" as a result of building space such as compensation, rational use of surfaces (7).

In Bulgaria, the concept of urban agriculture is perceived as a remnant of the traditions of "rural" culture, contrasting with the urban environment of the modern city.

The definition of a concept of urban agriculture is perceived and defined as:

- a strategy for improving the quality of life of urban communities;
- possibility for green roofs to combine architecture and design with food production;
- form of urban land use;
- Corporate social responsibility with sustainable food production in urban environments;
- the return of nature to the city, revealing new ways of knowingly adhering to a healthy diet;
- growing food on a limited space;
- urban growers growing vegetables between blocks;
- providing the best possible food for yourself and your family;
- option for a more social lifestyle;
- to do something with your hands, then to see and try the result;
- raising greater respect for food - where it comes from and how difficult it is to raise it;
- "creation" of agricultural land in the city;

- "new" citizens are looking for ways to reconnect with nature.

Zero plants can grow on zero areas, depending on the ability of the building or pitch to build green systems. Vegetable crops benefit from their short production cycle and a shallow root system.

Worldwide there are two types of chains for the realization of the production of urban agriculture:

Of closed type - production is consumed where it is produced.

Of open type, where production is sold or donated - supplies external consumers.

The points outlined above allow to highlight the following aspects of urban agriculture:

From *economical point of view* urban regeneration is expected to stimulate and strengthen the local economy by creating innovative business models.

The *ecological role* of urban agriculture is to maintain green urban infrastructure.

In the *social aspect* of urban farming, reliance on local communities and production is relied upon. Research has shown that polluted urban air does not adversely affect food production and is fit for consumption. The results indicate that the heavy metals accumulated are in standard and acceptable limits, and the food produced in the city is cleaner than the one produced in a conventional way.

As advantages of urban agriculture the following can be pointed out: improving the environment - plants capture harmful emissions, apply biological and ecological methods, create new jobs or volunteer work, sustainability and socialization is achieved, waste is recycled, heat island effect reduced, etc.

Different methods for urban agriculture are offered when searching for solutions. As such, the following ones are differentiated (9):

- hydroponic method - growing of plants in water;
- agri-culture - growing of indoor plants under roof, offices, halls, etc.;
- "aquaponic" or aqua-terraponic, a method of combined fish and vegetable breeding, excluding soil compartments.

Despite the advantages of urban farming, the biggest vertical farm in Sweden which failed indoor plants in office buildings, is a true example. The reason for this is the realization price, which is considered unprofitable (8).

RURAL ECONOMY IN THE CONTEXT OF INTEGRATED TERRITORIAL DEVELOPMENT

The diversity of rural areas in the EU is a challenge for choosing a common concept that is valid for the whole community. The definition of the Organization for economical cooperation and development (OECD) for rural areas divides the areas of predominantly rural, intermediate rural and predominantly urban areas. This definition does not cover their economic and demographic specificities (10).

According to preliminary Eurostat's data for research on the structure of the agricultural farms (FSS), in 2016, just over 171 million ha of land (around 40% of the total EU area) was used in 2016 for agricultural production. Although there are numerous (10.3 million

farms), small-scale farms with less than 5 ha (65%) predominate. In contrast, 3% of EU farms have an area of 100 ha or more and handle over half of the EU's agricultural area. 7% of the holding, which was an area of 50 ha or more, processed slightly more than two-thirds (68%) of EU utilized agricultural area (UAA). The average farm size in the EU is 16.6 ha in 2016 (19) - **Table 3**.

At national level (20, 21), by 2017, the relative share of used agricultural land from the agricultural area is 96.3% - **Figure 1**.

Contrasts also arise in terms of the economic size of farms. In 2016, the standard production of 4 million farms in the EU is under 2,000 € (just 1% of total agricultural output). 296,000 farms (3%) produce standard production of € 250,000 or more (55% of total agricultural output). One third (32%) of farm managers in the EU are over 65 or older. Only 11% of farm managers in the EU are young farmers under the age of 40.

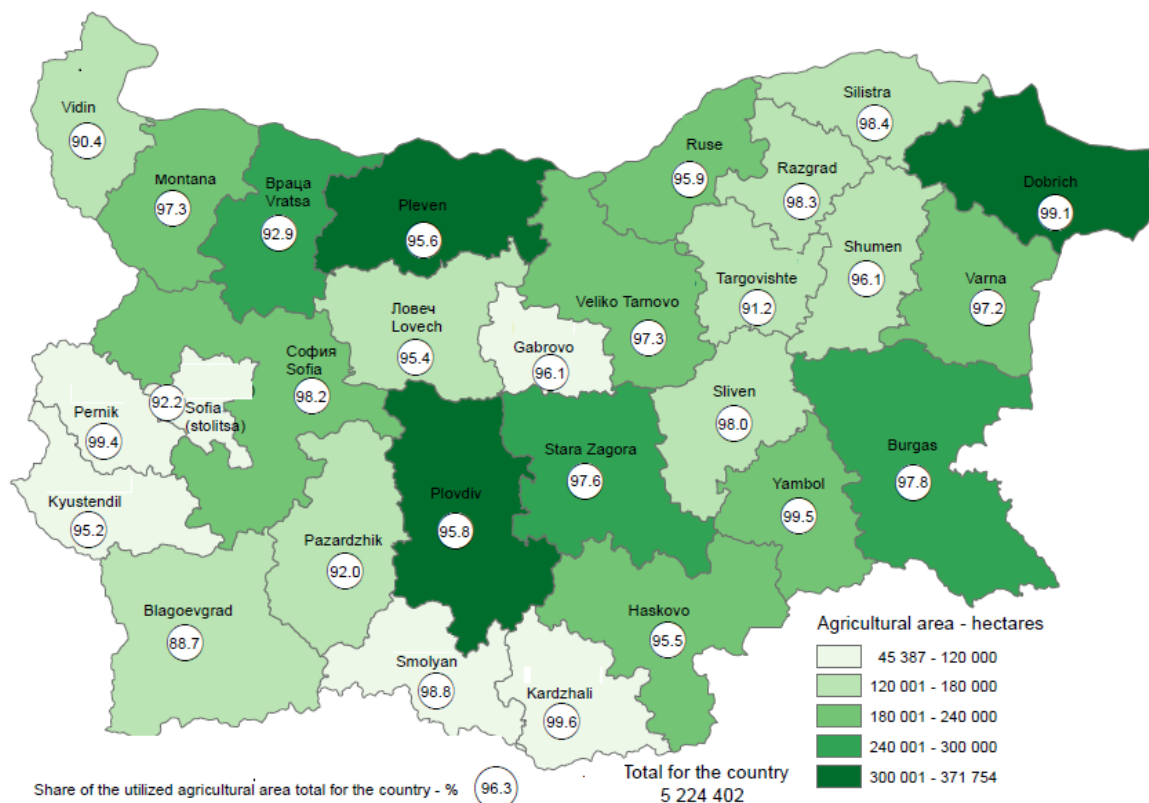


Figure 1. Share of the utilized agricultural area from the agricultural area in 2017
Source: National statistical institute, (www.nsi.bg), 12.04.2019

Table 3. Farm holdings and utilised agricultural area in the EU, 2016

Indicators	Number of holdings		Utilised agricultural area		Small farms (under 5 ha)		Large farms (> 50 hectares)	
	in thousands	share of EU total, %	in 1000 ha	share of EU total, %	share of all farms, %	share of UAA, %	share of all farms, %	share of UAA, %
EU*	10 321.2	100.0	171 288.5	100.0	65.4	6.1	7.0	68.1
Belgium	36.9	0.4	1 354.3	0.8	13.9	0.9	25.3	62.2
Bulgaria	202.7	2.0	4 468.5	2.6	82.6	2.9	4.8	87.3
Czech Republic	26.5	0.3	3 453.0	2.0	18.7	0.3	27.0	92.5
Denmark	35.1	0.3	2 614.6	1.5	4.4	0.1	35.3	85.4
Germany	264.8	2.6	15 166.9	8.9	8.7	0.3	30.5	78.3
Estonia	16.7	0.2	995.1	0.6	31.6	1.3	17.7	85.1
Ireland	137.6	1.3	4 883.7	2.9	7.4	0.6	18.0	51.6
Greece	685.0	6.6	4 553.8	2.7	77.3	18.5	0.9	41.4
Spain	945.0	9.2	23 229.8	13.6	51.6	4.3	10.8	70.8
France	456.5	4.4	27 814.2	16.2	24.3	0.8	41.3	86.9
Croatia	134.5	1.3	1 563.0	0.9	69.5	11.4	3.8	59.0
Italy*	1 010.3	9.8	12 098.9	7.1	58.7	11.4	4.5	44.0
Cyprus	34.9	0.3	111.9	0.1	89.6	28.1	1.0	33.1
Latvia	69.9	0.7	1 930.9	1.1	35.2	2.8	8.8	67.1
Lithuania	150.3	1.5	2 924.6	1.7	50.0	6.9	7.2	63.2
Luxembourg	2.0	0.0	130.7	0.1	16.2	0.5	51.8	88.9
Hungary	430.0	4.2	4 670.6	2.7	81.4	4.8	3.7	74.4
Malta	9.3	0.1	11.2	0.0	96.6	78.5	0.0	0.0
Netherlands	55.7	0.5	1 796.3	1.0	20.2	1.3	21.5	57.5
Austria	132.5	1.3	2 669.8	1.6	31.0	3.8	8.5	39.1
Poland	1 410.7	13.7	14 405.7	8.4	54.3	13.2	2.4	31.6
Portugal	259.0	2.5	3 641.7	2.1	71.5	9.1	4.2	66.9
Romania	3 422.0	33.2	12 502.5	7.3	91.8	28.7	0.5	51.1
Slovenia	69.9	0.7	488.4	0.3	59.5	19.9	0.9	13.7
Slovakia	25.7	0.2	1 889.8	1.1	55.7	1.5	13.0	92.1
Finland	49.7	0.5	2 233.1	1.3	4.0	0.2	30.0	66.9
Sweden	62.9	0.6	3 012.6	1.8	10.5	0.7	24.7	76.5
United Kingdom	185.1	1.8	16 673.3	9.7	10.2	0.3	38.6	88.2

Source: Eurostat

Table 5. Population projections by districts

Districts	Year												
	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070	2076	2080
Blagoevgrad	306370	298264	287439	275429	262708	249792	236619	223221	209800	196707	184242	172570	161902
Burgas	408054	400314	391217	381878	372370	362775	353074	343074	332655	321870	311334	301998	294286
Varna	469027	462175	454026	445544	437179	428634	419494	409354	397943	385482	372837	361256	351204
Veliko Tarnovo	233143	222275	211173	200189	189788	180218	171432	163142	154991	146816	138854	131292	124051
Vidin	82065	74467	67667	61535	56051	51231	46948	43014	39297	35825	32803	30267	28124
Vratsa	160247	150460	141302	132622	124411	116927	110086	103660	97571	91861	86770	82360	78535
Gabrovo	105971	98200	90634	83414	76692	70598	65065	59871	54869	50152	45877	42214	39137
Dobrich	171585	163102	154742	146654	138932	131659	124814	118287	112042	106133	100745	96009	91861
Kardzhali	146907	141002	134548	128043	121519	114945	108414	102087	96125	90542	85368	80648	76606
Kyustendil	117143	109482	102184	95328	88792	82728	77080	71744	66713	62051	57922	54439	51651
Lovech	122619	114892	107755	101152	94976	89326	84159	79318	74770	70567	66880	63760	61100
Montana	128011	120680	114026	107946	102460	97597	93258	89249	85451	81883	78722	76028	73723
Pazardzhik	252489	241789	231076	220699	210538	200639	191037	181806	173138	165025	157584	150881	145004
Pernik	118370	111679	105066	98906	93028	87494	82236	77167	72314	67668	63358	59637	56641
Pleven	236583	223127	210529	198978	188507	179341	171349	164153	157581	151549	146312	141979	138374
Plovdiv	663500	651689	639331	627533	616870	607028	597461	587528	577064	566220	555708	546373	538676
Razgrad	111130	105824	100551	95420	90504	85914	81579	77448	73508	69829	66541	63640	61057
Ruse	215806	206373	197152	188256	180038	172513	165521	158838	152290	145933	140023	134708	129887
Silistra	107055	100893	94791	89015	83734	78974	74623	70551	66784	63370	60389	57793	55540
Sliven	186359	182389	178847	175736	172965	170665	168892	167562	166564	165758	165248	165199	165671
Smolyan	103230	95270	87178	79364	71697	64380	57505	51223	45589	40555	36086	32174	28886
Sofia (stolitsa)	1336554	1350054	1362231	1372895	1386333	1401235	1414692	1424269	1428383	1427174	1423514	1420693	1419473
Sofia	227361	218833	210228	201773	193255	184869	176577	168206	159733	151297	143314	136133	129864
Stara Zagora	312265	300871	289689	278972	268920	259633	250987	242693	234515	226467	218939	212363	206881
Targovishte	109911	105277	100771	96486	92454	88672	85104	81710	78476	75472	72757	70388	68339
Haskovo	224911	214681	205017	195933	187288	179053	171248	163866	156828	150106	143864	138413	133888
Shumen	168221	160175	152025	143957	136197	128870	121878	115120	108510	102100	96117	90690	85802
Yambol	117255	111478	106269	101581	97294	93437	90005	86971	84240	81757	79551	77679	76154
Total	6942142	6735715	6527464	6325238	6135500	5959147	5791137	5625132	5457744	5290169	5131659	4991584	4872317

Source: National statistical institute, (www.nsi.bg), 03.07.2018.

Note: Option I is considered (in the case of convergence hypothesis): It is defined as realistic and complies with the European Union's statutory requirements for the demographic and socio-economic development of the member states. Information on II variant (relative acceleration) and III option (relative delay) is available on the NSI website.

Only about three out of ten (29%) farm managers in the EU are women, of which 23% are young. On a territory of 110 879 km² on national level 5 256 populated places are situated, of which 257 are cities, and 4 999 - villages. By the end of 2018, three-quarters of the country's population lived in the cities. Its uneven distribution by municipalities is as follows: in 73 municipalities with a population of less than 6,000 people live only 4% of the people in the country; and 41.3% of the country's population live in the two municipalities with over 100 thousand people (11).

According to data of the National Statistical Institute in 2018, there are 164 areas in the country where no one lives. Their number is greatest in the districts of Gabrovo (64), Veliko Tarnovo (55) and Kardzhali (11).

Table 4. Population by 31.12.2018 by towns

Districts	Indicators		
	Total	Male	Female
Total	5 159 129	2 481 128	2 678 001
Blagoevgrad	183 143	87 609	95 534
Burgas	313 566	150 248	163 318
Varna	395 596	191 802	203 794
Veliko Tarnovo	166 535	79 968	86 567
Vidin	54 999	26 627	28 372
Vratsa	95 695	46 284	49 411
Gabrovo	88 800	42 708	46 092
Dobrich	120 259	57 723	62 536
Kardzhali	63 016	30 217	32 799
Kyustendil	83 230	40 142	43 088
Lovech	78 589	38 111	40 478
Montana	83 412	40 294	43 118
Pazardzhik	160 414	77 790	82 624
Pernik	95 860	46 215	49 645
Pleven	161 005	77 684	83 321
Plovdiv	505 663	241 110	264 553
Razgrad	53 002	25 277	27 725
Ruse	170 634	83 113	87 521
Silistra	48 382	23 147	25 235
Sliven	122 910	59 048	63 862
Smolyan	59 242	28 488	30 754
Sofia (stolitsa)	1 269 384	607 859	661 525
Sofia	140 760	68 526	72 234
Stara Zagora	229 132	110 311	118 821
Targovishte	60 414	28 827	31 587
Haskovo	165 460	80 202	85 258
Shumen	105 908	50 966	54 942
Yambol	84 119	40 832	43 287

Source: National statistical institute, (www.nsi.bg), 12.04.2019

The expected decrease in the population over the 2020-2080 period is presented in **Table 5** below.

In rural areas, the trend of total population decline (migration to and from cities and abroad) is stronger than urban - **Table 6**.

Table 6. Internal migration of population (number) in 2018 between towns and villages

Inhabited	Moved		Inhabited, total
	From the cities	From the villages	
Total	46871	27129	74000
In towns	23604	12206	35810
In villages	70475	39335	109810
Moved, total	3525	-3525	0

Source: National statistical institute, (www.nsi.bg), 12.04.2019

In other than 1900 places live under 50 people. One third of the population is concentrated in six cities - Sofia, Plovdiv, Varna Bourgas, Rousse and Stara Zagora.

According to the national definition adopted in the Rural Development Program (2007- 2013), rural municipalities are defined as those with a population density of up to 150 inhabitants per km² and without any population density of more than 30 000 inhabitants (12). This is the reason for the classification of 231 of the municipalities for rural ones, which make up 87.5% of the total number of Bulgarian municipalities in Bulgaria. They live in nearly 40% of the population, unevenly distributed in 208 cities and 3,918 villages.

The steady trend of population decrease at national level as of 31.12.2018 is presented in **Table 4**.

Population density in rural areas is on average 32.1 people / km² and is lower than the average for the country (66.4 people / km²).

Rural areas are characterized by a more unfavorable age structure than urban - with low educational status, high unemployment (including young people).

CONCLUSION

In conclusion, urban agriculture is seen as a step in the future for sustainable food production in urban settings. The essence of urban agriculture at national level and the resulting social, economic and environmental impacts require publicly available databases to

deepen the analysis, as a result of which the public benefits are presented - whether and to what extent urban agriculture contributes to creating and strengthening improvement microclimate and living conditions of the urban population.

Developing a unified concept of urban agriculture requires the development of clear and precise parameters of agriculture as urban than other forms of food production (including private land for domestic production). Effective incentives in this direction require typing urban farming (differentiation of different types of urban gardens), preparing an online map of existing agricultural areas in cities, clarifying the status of plots, plant and animal species for breeding, providing trained experts urban agriculture and others.

The related (and consequent as a result of it) problems in the Bulgarian villages are depopulation, the critical aging of the population, dictated by the migration of working-age people to urban areas, lack or underdeveloped infrastructure. The lack of many of them in a healthcare facility, kindergarten, school, community center and others keep the tendency of depopulation. All this makes the regions hopeless and strengthens the negative processes in the lagging municipalities. Rural development depends on preserving and attracting human capital, developing local entrepreneurship and investing in technology capital.

In order to help rural areas to grow and raise their employment and standard of living, the European Union's rural development policy must be geared to developing regional spatial development schemes, which will bring priorities for each of the regions in economic, social and ecological aspect.

When determining a definition for rural municipalities, it is necessary to reflect their real status. This is all the more necessary in view of their relatively high share at national level. The definition reflects the specific problems of the municipalities and can be used as a measure of their development in dynamics.

The current economic, social and environmental challenges go beyond traditional administrative boundaries and the growing gap between administrative and territorial structures (cooperation between urban and suburban areas, cooperation between urban and rural areas, etc.). In this respect, new

forms of flexible governance are required to continue the integrated territorial development of functional areas

REFERENCES

1. www.capital.bg/politika_i_ekonomika/sedmicata/2018/04/13/3162023_gradski_zemedelci/
2. https://ec.europa.eu/regional_policy/bg/policy/themes/rural-development/
3. www.bgfarmer.bg/Article/6991556
4. Mihova, K. Ustoichivi selishta i gradsko zemedelie, http://research.ue-varna.bg/admin/kcfinder/upload/files/TOM_II-175-185.pdf
5. <http://www.aswm.net/index.php/bg/projects-bg/item/127-agrigo4cities-project>
6. <https://vizia.sofia.bg/environment/urban-nature/>
7. www.urbanagriculture-bg.com/proekt
8. <https://agrozona.bg/falira-nay-golyamata-vertikalna-ferma-v-shvetsiya/>
9. <http://forumat-bg.com/ekonomika/5441-nova-kontzeptziya-ulesnyava-gradskoto-zemedelie-v-germaniya>
10. https://www.researchgate.net/profile/Ralitsa_Simeonova-Ganeva/publication/274665774_Socialno-ikonomeski_osobenosti_na_selskite_rajoni_v_Blgaria/links/552562210cf295bf160e7826/Socialno-ikonomeski-osobenosti-na-selskite-rajoni-v-Blgaria.pdf
11. <https://www.segabg.com/category-bulgaria/bulgariya-ima-164-prazni-sela>
12. Simova, A & other. Socialno-ikonomeski osobenosti na selskite raioni v Bulgaria, DZZD GTF Konsult, fevruari, 2013, https://www.researchgate.net/profile/Ralitsa_Simeonova-Ganeva/publication/274665774_Socialno-ikonomeski_osobenosti_na_selskite_rajoni_v_Bulgaria/links/552562210cf295bf160e7826/Socialno-ikonomeski-osobenosti-na-selskite-rajoni-v-Blgaria.pdf
13. <http://www.nsi.bg/bg/content/157/basic-page/>
14. https://ec.europa.eu/regional_policy/bg/policy/what/glossary/n/nuts/
15. www.europarl.europa.eu/RegData/etudes/fiches_techniques/2017/N51535/bg.pdf
16. http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction
17. <https://plovdivglas.bg/1855241/mrrb-shestte-rajona-ot-nivo-nuts-2-se-zapazvat-do-2027-godin>
18. https://gradat.bg/news/2018/04/23/3167498_arh_belin_mollov_varianti_za_novi_raioni_za_planirane

19. Eurostat, newsrelease, 105/2018, 28 June 2018, www.ec.europa.eu/eurostat/documents/2995521/9028470/5-28062018-AP-EN.pdf/8d97f49b-81c0-4f87-bdde-03fe8c3b8ec2
20. Petrova, S. Obosnovavane strukturirane na asortimenta na agrarni produkti (in bulgarian). Sbornik dokladi ot Yubileina nauchnoprakticheska konferencia s mejdunarodno uchastie "Nacionalniat agraren sector – element na evropeiskite zemedelski regioni v strategijata "Evropa 2020", Tom I, AI "Tsenov", Svishtov, p. 267-272, 2014.
21. Petrova, S. Izsledvane na promenite v strukturata na asortimenta na agrarni produkti (in bulgarian). Sbornik dokladi ot Krygla masa "Obshtata selskostopanska politika na Evropeiskia syuz I agrobiznesa v Republika Bylgaria – ikonomicheski I pravni problemi, AI "Tsenov", Svishtov, p. 113-118, 2016.