The Role of Agriculture in the Sustainable Territorial Development

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Abstract

Agriculture is the dominant activity for a significant share of the world population and it is carried out on one third of available land on the Planet. Sustainable agriculture that protects agricultural resources, biodiversity and climate and promotes diversification is one of the priorities mentioned by all the documents that have been lately dealing with a new social development model based on the concept of social, economic and environmental sustainability.

The contribution of agriculture to sustainable development is highly territorially determined and is visible through the role of agriculture in the territorial dynamics of rural and peri-urban areas. EU CAP has initiated regional rural development programmes, using LEADER approach, that observe territorial heterogeneity of rural and peri-urban communities and their specific economic, ecological and social needs.

Through intensive work aimed to outline strategic development documents and to guide their implementation in practice, Serbia strives towards harmonisation of its priorities in this field with related EU policies.

Key words: sustainable development, agriculture, territorial development

JEL Classification: Q18, Q19, Q16

Introduction

The developed countries, primarily the EU members, have been the first to realise the multifunctional role of (sustainable) agriculture, i.e. its capacity to contribute to economic, social and environmental challenges of territorial development.

Modern multifunctional agriculture creates conditions for local polarisation. Since the end of the nineties, multifunctional agriculture has been established as the European Model for Agriculture that is capable of “maintaining the countryside, conserving nature and making a key contribution to the vitality of rural life, and must be able to respond to consumer concerns and demands regarding food quality and safety, environmental protection and the safeguarding of animal welfare” (EC, 1997). The concept of multifunctional agriculture is not in conflict with a new European rural development policy that has a wider framework encompassing the induced structural effects in the rural economy.
Provision of sustainable agriculture that guarantees protection of agro-environment and optimum use of agricultural land in compliance with natural possibilities and limitations on the given area is one of the key recommendations for the policy of balanced and sustainable development of the territory of the EU, defined in the European Spatial Development Perspectives (ESDP, 1999: 24-25).

EU representatives agree that the contribution of agriculture to sustainable development is a critical component of territorial development in rural areas but also in many semi-urban areas. These considerations highlight the strategic and fundamental role of integration between territorial and agricultural economic planning policies and instruments.¹

European Commission in its Programming Guide for Strategy Papers of November 2008, defines territorial development (TD) as a holistic, spatially accented and participatory approach to development that fosters a territorially balanced economic growth and the reduction of spatial inequalities in living standards by promoting the distinctive characters of a lagging area, developing its endogenous potential (assets, human, social and economical capital) to enhance local competitiveness, and linking it to other lagging and leading regions and markets. TD is based on the existence of a shared territorial identity amongst different stakeholders living within a specific area.² EC also stressed that TD is a concept based on a multi-sectoral approach, including the sustainable management of the rural space and its economic and social links with urban centers, as well as the decentralization process and issues of local governance, and that migration from rural areas of an increasing number of rural poor and the urbanization phenomenon is a challenge demanding a new integrated rural/urban approach (EC, 2008).

EU CAP gives guidelines and approves Member states and regions rural development strategy plans and programmes, implementing LEADER approach³. LEADER observes territorial heterogeneity of rural areas and their specific economic, environmental and social needs.⁴ Sustainable territorial development strategies, relied on the SWOT analysis, should include the options for:

- use of agricultural land according its natural potentials, within the frameworks of integrated management of natural resources policy, directed towards the improvement of environment, rehabilitation of soil, water, air and landscape and conservation of flora and fauna and their habitats;
- improving of production and marketing of high quality locally produced food using comparative advantages of heterogeneous agro-ecological conditions and support to restructuring and improving of human and physical potentials of agricultural sector, increasing of the processing capacities and adopting of modern food quality standards;
- promoting of multifunctional agriculture on family holdings as the base of diversification of economic activities aimed at increasing the quality of life of the local population;
- strengthening of small and medium-sized towns as central points of regional development through providing public services and improving their linking and cooperation, mutually, and with its rural periphery, in particular at the level of investing into infrastructure;
- establishing of partnership between local stakeholders from the public and civil sectors in defining and implementation of local strategy/development plans and accomplishment of

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¹ This has required major changes as far as scientific objectives, themes and practices are concerned: research needs to address the interactions between agriculture and other activities and spatial uses (agriculture should be understood in the broadest sense, including forestry, aquaculture, food and non food processing...; TD primarily covers rural development, but also addresses urban fringes and urban-rural interactions), (INRA, 2006).

² Not necessarily precisely bounded.


⁴ Area-based local development strategies intended for well-identified subregional rural territories, originally introduced as an instrument for rural development in less favoured areas, under the Leader + programme it has also shown to have an added value in most peri urban regions.
transregional and international cooperation within joint development projects and exchange of experiences.

Integration between spatial and agricultural economic planning policies and instruments plays a strategic role, especially in peri-urban areas. Urban and peri-urban agriculture has even more significant multifunctional (economic, ecological, social) roles than rural agriculture. Urban agriculture complements rural agriculture at a time when the costs of food supplying from rural areas to cities (cool storage, transport, packaging ...) are rising as well as the number of urban poor areas. Agriculture stimulates social inclusion of newcomers and disadvantages the groups from the urban system and enterprise development in what concerns input supply, processing, marketing and agro-tourism. About 15-20% of the world's total food is produced in urban areas. For perishable products this share goes up to 60-70%. (Zeeuw, 2006).

The agricultural land in peri-urban areas has the role of green “lung” of large agglomerations and it makes the key element of spatial planning that restrains the unlimited growth of cities, takes care of and shapes the landscape, revives degenerated lands and creates a human-friendly environment. On the other side, urban neighborhood makes agricultural environmental and health risks related to soil, water and air pollution more serious. The future CAP cannot disregard these risks. Multifunctional land use must be supported by strong EU territorial policies. The EU Peri-Urban Regions Platform Europe – PURPLE, stresses that the balance between sustainable open space, sustainable agriculture and urban spatial and economic dynamics needs to be re-established. In its latest Declaration to the EU Agricultural Ministers, PURPLE suggests that peri-urban areas need tailored agricultural strategies, as well as appropriate policy instruments (PURPLE, 2008).

The remaining space, the so-called autonomous rural areas, with the towns of small and medium size and distant rural peripheries are characterised by the presence of factors that continuously resist polarisation (unfavourable structure of production factors, poor infrastructure, lack of structural adjustment etc.). In these regions, sustainable agriculture may contribute to initiating local polarisation, stimulating dispersion in a new, productive way. In regions with unfavourable structure of production factors and structurally weaknesses, agriculture can answer the challenges of increasing competitiveness with high quality products (organic production, production of high quality products from a defined geographical area) and diversification of activities, instead of resources exhausting. The impact of organic production on the increase of employment in agriculture is not significant.

However, marketing and processing of organic and high quality traditional local products can be a relevant factor of development of small businesses in rural areas. Organic agriculture can contribute to a positive image of rural areas, not only with respect to agriculture, but also with respect to other sectors of rural economy, like tourism. Agriculture on the periphery and in areas with highly valuable natural resources is turned towards production for the protection of agro environment (agriculture of protection, Bruno, 2001). Agriculture is the condition for the conservation of the environment and natural values while the appropriate policy of agro-ecological subsidies is the method to provide an adequate income level and to keep people at farms.

Nevertheless, it should bear in mind that the lead feature of urban (intra- and peri-) agriculture, which distinguishes it from rural agriculture is its integration into the urban economic and ecological system (“ecosystem”). It is not its urban location which distinguishes UA from rural agriculture, but the fact that it is embedded in and interacting with the urban ecosystem (Richter et al. 1995).

Peri-urban regions constitute the interface between the 75% of EU citizens living in Europe’s urban areas and the adjacent countryside, which is increasingly valued for its local produce and resources, its diverse landscapes, rich cultural heritage and quality of life.

In most cases we will find a continuum from intra- to urban and rural agriculture comprising various farming systems and it is of importance to realize the differences and complementarities between urban (intra- and peri-) and rural agriculture, as each of these create specific opportunities and challenges for the effective territorial development. Having that in mind, the PURPLE’ viewpoint of the future CAP, acting in synergies with other EU policies, particularly cohesion and spatial policy, seems to be absolutely correct.

Agriculture and Territorial Development in Serbia

Serbia is on the way to joining the EU and accepting the European model of agriculture that compromises cross-compliance and agri-environmental, Axis II RDP measures for agricultural producers in the national territory as a whole. But, until these requests become compulsory, the intention of our authorities and planners must be to enforce sustainable agricultural farming systems primarily in the regions that already have resource preconditions and urgent necessity for that.

According to the Census from 2002, there were 778.9 thousand agricultural holdings in Serbia that used 2.87 million ha of agricultural land, with the average of 2.46 ha of arable land within 4 parcels per holding. Close to 78% of holdings owned less than 5 ha and only 5.5% owned more than 10 ha, using 24.7% of the total agricultural land. The farms with the dominating non-agricultural sources of income were the most numerous in the farm structure. The agricultural sector still has a significant share in total employment. More than 1/5 of the total workforce is employed in agriculture. Rural and peri-urban areas in Serbia are highly diverse in geographic, demographic, social and economic terms. The poverty rate in rural areas in Serbia was 14.2% in 2002 and it was almost twice higher than the corresponding rate in urban areas (7.8%). The rate of rural poverty was the highest in south-east Serbia, up to 22.7%. In 2006, 8.8% of the population in Serbia was classified as poor (5.3% in urban and 13.3% in rural areas). It is necessary to identify regional similarities and differences, as well as their advantages and weaknesses that will be the basis for defining the well-tailored strategy and appropriate measure for their development. Our opinion is that at the moment sustainable agriculture in Serbia is of special interest for peri-urban and mountain rural areas of the country.

We shall start our analysis with a short review of solutions of the recently set Agricultural development Strategy of the City of Belgrade until 2015, which have been harmonised with the appropriate solutions of the Regional Spatial Plan of the Administrative Area of Belgrade and Development Strategy of the City of Belgrade from May 2008. During the previous two decades, however, a dynamic urbanisation process has been going on in the outskirt areas of Belgrade, mainly of uncontrolled housing development that has been going on hand in hand with irrational transformation of agricultural land into construction sites, overloading of infrastructural systems and threats to the environment. On the other hand, the city is getting fast development dimension that sets serious dilemmas in front of the competent authorities in terms of land use transformation. The balance between preservation of land suitable for agriculture and transformation of land for other development purposes is necessary. In decision making on changes of agricultural land into construction sites purposes it should be taken into account that it is the matter of irreversible process with environmental and social consequences that have to be considered in an adequate way.

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8 Consumption per capita (consumer's unit) below 4.489 dinars or $72 a month, i.e. $2.4 a day (The Government of the Republic of Serbia, 2003: 8, 10, 147).
9 Monthly consumption per consumer's unit was, on the average, lower than the poverty line of 6221 dinars. (The Government of the Republic of Serbia, 2007: 19).
12 www.beograd.org.
Having that in mind, the Regional Spatial Plan of the Administrative Area of Belgrade anticipates the following through the appropriate planning solutions:

- Setting up of the system of protection, use and improvement of agricultural land; stopping of uncontrolled capturing of fertile land for non-agricultural forms of use and bringing of uncultivated and waste land to its proper purpose; and reduction of unfavourable impacts of development of mining, energy and other industrial activities on available surfaces and quality of agricultural land;

- Improvement of organisational, technical-technological, environmental, and economic conditions of agricultural production at family holdings; setting up of the system of ecological/organic agriculture;

- More complete agro-ecological and economic valorisation of spatial differentiation of UPA areas.

The focus point of the subject area is a strong urban centre of Belgrade surrounded with smaller urban and rural centres with higher or lower level of economic independence that make together a complex and dynamic system of the City of Belgrade (Administrative Area of Belgrade, 17 municipalities).\(^\text{13}\)

**SWOT analysis\(^\text{14}\) of the ecological, social, and economic capacity of the space, especially of agricultural holdings according to basic socio-economic indicators points to the satisfying number of holdings, in particular to the medium-sized ones, as well as to a sufficient number of younger and educated people living at those holdings, capable of starting up and developing either a profitable, market oriented agricultural farm or small business at a multi-functional holding (Table 1).**

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<thead>
<tr>
<th>Holding structure according to:</th>
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<tbody>
<tr>
<td>Population (%)</td>
<td>Income source (%)</td>
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<tr>
<td>Age 15-50</td>
<td>Sec &amp; high education</td>
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<tr>
<td>Voždovac</td>
<td>63.4</td>
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<tr>
<td>Vračar</td>
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<tr>
<td>Zvezdara</td>
<td>56.0</td>
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<tr>
<td>Zemun</td>
<td>65.3</td>
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<tr>
<td>S. Beograd</td>
<td>35.6</td>
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<tr>
<td>Palilula</td>
<td>71.4</td>
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<tr>
<td>Rakovica</td>
<td>40.7</td>
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<tr>
<td>S. Venac</td>
<td>0.0</td>
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<tr>
<td>Stari Grad</td>
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<tr>
<td>Ćukarica</td>
<td>53.1</td>
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<tr>
<td>Barsajno</td>
<td>71.2</td>
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<tr>
<td>Grocka</td>
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<tr>
<td>Lazarevac</td>
<td>60.5</td>
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<tr>
<td>Mladenovac</td>
<td>80.6</td>
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<tr>
<td>Obrenovac</td>
<td>74.6</td>
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<tr>
<td>Sopot</td>
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<tr>
<td>Surčin</td>
<td>89.4</td>
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<tr>
<td>City of Belgrade</td>
<td>69.1</td>
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* Data related to holdings of Surčin municipality were included in data related to Zemun municipality, which Surčin municipality was the part of until 2004. Source: Statistical Office of the Republic of Serbia. Municipalities of Serbia, 2007 (land); Census 2002, Statistical Office of the Republic of Serbia (holdings).

\(^\text{13}\) The area of the City of Belgrade covers the surface of 322 268 hectares. Agricultural land cover 69.1%, with the dominant arable land in their structure (80%). There are 17 municipalities that belong to the City of Belgrade area and 166 settlements with more than 1.6 million inhabitants in total (Statistical Office of the Republic of Serbia, 2007:15, 144).

The spatial distribution of the different farming systems, respecting ecological, social, and economic characteristics of the City territory, proves the maintenance of UPA areas defined by Regional Spatial Plan.

*Intra-urban agriculture* includes the agricultural enclaves and backyard gardening and raising of animals on household plots and vacant and under-utilized land within the built-up city (territory of the, statistically called, Belgrade Settlement\(^{15}\) that covers municipalities of: Vračar, Zvezdara, Novi Beograd, Rakovica, Sâvski Venac, Stari Grad and parts of the municipalities: Voždovac, Zemun, Palilula and Ćukarica).

*Peri-urban agriculture* encompasses areas of\(^{16}\):

1. intensive vegetable-fruit-grape production (southern Palilula and Grocka, northern Mladenovac and southern parts of Sopot and Barajevo municipalities);
2. commercially oriented crop-animal production on family holdings (municipalities of Obrenovac, Mladenovac and Lazarevac);
3. capital intensive crops and animal production on the large private farms (north part of Palilula, Surčin, and west part of Obrenovac municipalities);
4. open-pit mining activities, that require recultivation of degenerated lands (Kolubara lignite basin on the territory of municipalities Obrenovac and Lazarevac);
5. rural tourism and recreation and small farms of horses, game, rare sort of poultry etc (municipalities of Grocka, Sopot, Mladenovac);
6. areas with potentials for organic/eco/bio food production (south parts of Obrenovac and Lazarevac municipalities).

Observing the above-mentioned spatial frameworks, the Strategy of agriculture development sets up a large number of development *measures* and *projects* such as:

- increased competitiveness of agricultural sector based on sustainable development principles (improvement of advisory services, education, support to young farmers in overtaking of holding, development of the land market, intensification of plant and cattle breeding production adapted to UPA production systems and demands at the market of the City, with a special emphasis on the development of organic production, introduction of quality systems and strengthening of producer associations);
- infrastructure development and preservation and protection of natural resources and the environment (protection and regulation of agricultural land, revitalisation of degraded surfaces, privatisation, monitoring systems for preservation of quality of soil, water, air and bio-diversity);
- diversification of agricultural activities (agro-tourism) (IAE, 2008: 272-313).

*The mountain areas* of the Republic of Serbia\(^{17}\) encompass the territory of 17 municipalities (21% of settlements, 7.2% of population and 15.5% of the national territory, without Kosovo and Metohija) in the south-east and south-west of the Republic: Bosilegrad, Brus, Vranje, Dimitrovgrad, Ivanjica, Nova Varos, Novi Pazar, Pirot, Priboj, Prijevoj, Raska, Sjenica, Sur dulica, Trgoviste, Tutin, Crna Trava and Cajetina. Depopulation and unfavourable age structure of the population are present in the largest part of the analysed area. The share of agricultural population is above the average. These municipalities dispose of 12.5% of agricultural

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\(^{15}\) The area of the Belgrade Settlement covers the surface of 35.995 hectares (Census, 2002).

\(^{16}\) Regional Spatial Plan of Belgrade City - Referral Chart 1., http://www.beograd.rs/documents/regplan/namena.jpg.

\(^{17}\) Defined according to Karisik, Okanovic, 1997. *Agricultural areas in Serbia according to sea-level altitude of cadastral municipalities* in Popovic at all, 2007: 815.
land, low share of arable land (23.5% in comparison with 65.1% of the Republic average) and significant, ecologically preserved areas under pastures and meadows that are suitable for cattle breeding and setting up of organic agriculture.

Although the analysed indicators are generally less favourable than the national average, the fact is that they differ highly at the level of municipalities – from border municipalities in the south-east that are affected by depopulation, with a high share of population that is more than 60 years old, low income, consumption and investments (Bosilegrad, Crna Trava, Trgoviste); municipalities at the periphery of a functional region of Novi Pazar (Tutin, Sjenica), with a significant portion of younger, unemployed workforce, which can be mainly found within the holdings, up to municipalities of Brus, Ivanjica and Cajetina, in the south-west, also with poor economic growth indicators but with significant resources in tourism and agricultural production, primarily in cattle breeding.

Eleven of the above-mentioned municipalities\(^\text{18}\) are border regions, which implies certain development limitations. Fifteen of them are considered marginal areas\(^\text{19}\) so that they have beneficiary treatment in use of financial support designated to rural development. Nine of them are in the group of economically less-developed regions (Bosilegrad, Tutin, Trgoviste, Sjenica, Prijepolje, Novi Pazar, Priboj, Dimitrovgrad and Brus)\(^\text{20}\) and four are granted the status of devastated areas (Priboj, Prijepolje, Raska and Dimitrovgrad)\(^\text{21}\), which ensures them a preferential access to development funds.

Most of those municipalities are characterised by significant potential in tourism - Cajetina (Zlatibor), Nova Varos (Zlatar), Sjenica, Ivanjica (Goliża), Raska, Brus, (Kopaonik, Josanicka banja), Pirot and Dimitrovgrad (Stara planina). According to the Spatial Plan of the Republic of Serbia, the status of regional development centre is assigned to Prijepolje, Novi Pazar, Vranje and Pirot. Some of those municipalities gravitate around the Corridor 10 that links Serbia with the south and south-east of the Continent, which is a significant development advantage.

The choice between available production methods and activities depends on the above-mentioned spatial pre-conditions. The opportunities are various (Popovic et all, 2007: 818):

- organic production of grains, meat, milk, fruit and vegetables, mushrooms, medical and aromatic plants, honey;
- the so-called small business programmes in agriculture, forestry, fishery and water management (green house production of vegetables, strawberries, medical and aromatic plants, spices and flowers, using thermal waters where they are available, breeding autochthonous races of animals, horses, fur-bearing animals, game...);
- agri-environment activities\(^\text{22}\) (natural handicap payments to farmer in mountain areas, payments to farmers in areas with handicaps, other than mountain areas, Natura 2000 payments, agri-environment payments, animal welfare payments, support for non-productive investments, first afforestation of agricultural land, forest-environment payments etc.).

Organic products, collected and cultivated as final products or raw materials for the traditional high quality processed products of protected geographical origin, that protect environment, biodiversity and landscape, represent priorities in the development of sustainable agriculture in

\(^{18}\) Except for Brus, Vranje, Ivanjica, Nova Varos, Novi Pazar and Raska.

\(^{19}\) Except for Brus and Vranje.


\(^{22}\) The implementation of these activities is conditioned with related legal acts and budgetary support at national level (the activities under so-called preparatory work for implementation/application measures in Serbia, defined by MAFW Plan of Rural Development Strategy for Serbia 2008-2013 (MAFW, 2007:13).
a large part of mountain regions. In the Second Review of the Status of the Environment in the Republic of Serbia from 2007, the UNECE recommended to the Ministry of Agriculture and Water Management to promote the development of organic production and ecological marketing of food products (UNECE, 2007: 145-146). Since 2005, the Ministry has been co-financing the certification of organic production and since 2006 the promotion of organic production, education of producers and establishment of organic production.

The total collection area with certified wild organic products in Serbia is growing - from 0.2 million ha in 2004 to more than 1.0 million ha in 2006, whereas the area under cultivated crops grew from 550 to 790 ha in that same period (Government of the RS, 2007b: 105). Protection of geographic origin is the opportunity for Serbian producers of traditional products to increase competitiveness, receive a better market position and contribute to the development of rural economy, in particular in less developed rural areas.

Taking into account the European Union Regulation 510/2006\(^\text{23}\) according to which the third countries were granted the possibility to register in the territory of the EU the products of protected geographic origin that had been previously registered at the national level, the Ministry of Agriculture started to protect geographic origin of food products with special characteristics being the result of their physical, chemical and organoleptic properties, method of production and the region they originate.

In the end of the above mentioned analysis, it’s very important to point out the significance of local stakeholders in the territorial development programming. The researchers and experiences from practice show that the developed regions differ from the regions that are lagging behind primarily by having or not having a dynamic, democratic oriented and solidary group.

This Local Action Group (LAG) of the local authorities, entrepreneurs and NVOs representatives have a decisive role in partnership building, first of all amongst themselves and with the employees, and also along the regional/national/EU vertical axis providing the market of goods and services and attracting investors and experts into the region.

In sustainable, multifunctional agriculture, sustainable development strategies, depending on the defined development potentials and limitations, and in compliance with the solution of the relevant spatial policy documents, hold the key link in the chain of local development design, having in mind the ecological, economic and social challenges that it is exposed to.

### Conclusions

Since the middle of the nineties of the last century, the concept of sustainable agriculture and rural development has been the basis of agricultural and rural development policy at the global level.

The spatial and system approach to development, supplemented with the necessary component of sustainability makes the theoretical basis of a new concept of sustainable territorial development that encompasses primarily rural development, but also addresses urban fringes and urban-rural interactions.

The multifunctional, sustainable agriculture has a significant role in preservation of natural resources, improvement of market competitiveness and successful diversification of activities that guarantee a balanced economic growth. This result can be provided within the frameworks of sustainable territorial development strategies that observe heterogeneity of regions, their specific economic, environmental and social needs and rural-urban linkages.

References


Rolul agriculturii în dezvoltarea teritorială durabilă

Rezumat

Agricultura reprezintă principală activitate pentru o parte semnificativă a populației globului, fiind desfășurată pe o treime din terenul disponibil pe Planetă. Agricultura durabilă care protejează resursele agricole, biodiversitatea și clima, promovând diversitatea, constituie una dintre prioritățile menționate în toate documentele ce au în vedere noul model de dezvoltare socială bazat pe conceptul de sustenabilitate socială, economică și de mediu.

Contribuția agriculturii la dezvoltarea durabilă este în mare parte determinată de teritorialitate și este vizibilă prin rolul acesteia în dinamica teritorială a zonelor rurale și peri-urbane. EU CAP a inițiat programe de dezvoltare rurală regională, utilizând metoda LEADER care fișe sub observație eterogenitatea teritorială a comunităților rurale și peri-urbane și nevoile lor economice, ecologice și sociale.

Prin eforturi intense ce își propun evidențierea documentelor de dezvoltare strategică și punerea lor în practică, Serbia se străduiește să își formuleze prioritățile în conformitate cu politicile europene corespunzătoare.