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Organic agriculture in terms of sustainable development and rural areas’ development

Author: Roljević Svetlana, Grujić Biljana, Sarić Radojica


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Abstract: Besides it represents a support to sustainable development, organic agriculture represents also a driving force of rural development for sixty years, especially in marginal areas. As it bases on the principles of natural resources' sustainable use, protects the population health and leads to an economic strengthening of rural areas, the organic agriculture can be successfully related to rural areas' sustainable development concept, which was the goal of the paper. The paper was structured in three parts. In the first part was discussed on the sustainable development concept, from the aspect of sustainable agro-rural development catalyst. In the second part of the paper was pointed out to the concept of agrarian policy in the European Union, which was having a mutual effect on pressing forward the organic production and sustainable development during last years. Then was given a review of the structure in the Republic of Serbia, through it came to a conclusion that our country did not have satisfying rural economy, while the economic structure depended a lot from the primary sector, which has been still based on the primary resources' exploitation and high rate of poor rural population. In the third part of the paper was given the analysis of areas under the organic production in the world, and then was presented a proportion of these areas in some countries of the European Union, and finally was given the review of the state in the Republic.

1 Paper work is part of the project research 46006 „Sustainable agriculture and rural development in function of Republic of Serbia strategic goals achievement within the Danube region“, and project 179028 „Rural work market and rural economics of Serbia - diversification of income and decrease of rural poverty“ financed by the Ministry of Education and Science, member of researching team, period 2011-2014.
of Serbia. As the conclusion imposes a fact that, in Serbia, cannot be expected yet more intensive increase of the organic production, although we dispose with significant natural resources, while the limits of its serious implementation are present on several levels, mentioned in this paper. However, joining the European Union would provide the conditions for activating the existing capacities and development of rural areas, based on sustainability principle.

**Keywords:** sustainable development, rural development, organic production

### Introduction

Throughout the world a tendency of poor quality food production is very common, and some countries are facing lack of any food, almost for decades. The causes lie in the agricultural production. Conventional agriculture succeeds in providing the required amount of food thanks to a very high level of inputs consumed in aim to achieve adequate returns. The consumption structure is dominated by external inputs related to the direct and indirect use of fossil fuels, mineral fertilizers (nitrogen fertilizers in intensive grain production systems are represented with as much as 30% of total inputs) and pesticides (about 15% of total inputs). Input prices are directly mapped to the price of finished goods and food, which is becoming increasingly expensive and inaccessible to a significant percentage of global population, so we can say that conventional farming seems to be an open system that is largely dependent on external economic impacts, respectively fuel prices, fertilizer and pesticides.

It is clear that such a system is highly unstable and unsustainable. However, recent decades brought an alternative ways of food production based on the natural balance of matter and energy circulation. In such forms of production organic farming is also placed. Organic agriculture is a sophisticated alternative system of agriculture production. It is a sustainable, highly productive, economic and socio acceptable. The sustainability of organic production is reflected in the extensive use of natural resources, which does not exhaust them but it maintains and increases their diversity without leaving adverse environmental impacts. Organic agriculture, as a central and essential part of an integrated approach through a review of rural agro-positive changes in the environment, is fully integrated in the concept of sustainable development, observed in the strategic long term. This view is acceptable, regarding the concept of sustainable development as a basic principle and a key measure of the community functioning and its quality development in the future.

The fact is, unless representing the backbone of sustainable development, organic farming for sixty years represents the driving force of rural development, especially in marginalized areas. The concept of rural development can be found in economic theory and economic practice in recent decades. In order to develop rural areas in the right direction, it is essential to implement rural policies and clearly define the priority users, priority goals and
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The priority objective is to achieve full employment of the rural population, and, as most effective development strategy, emphasizes the development of local governance structures and investment in human resources in rural areas. Organic production has an important role in the development of rural areas, because it enables economic development, attracts financial resources, diversifies activities and social cohesion.

Developing countries that have not reached a significant level of industrialization have particularly large benefits in the practice of organic farming. Preservation of natural resources is a key condition for establishing this system of food production, a condition that developed countries are losing slowly. In this way, the financial resources of developed countries need more organic products, remit to the less developed countries through the development of organic agriculture, achieving socio-economic progress simultaneously.

**Agro-rural aspect of sustainable development in the context of organic agriculture**

During the last two decades, globally, the concept of sustainable development attracts increasing attention at national, global, regional and local level, and occupies a key position in terms of consideration of long-term prospects of progress of modern human society. This view is reflected in the fact that the present development model in the world is unsustainable, since it is substantially burdened by unlimited economic growth, which in the forefront place profits increase at any cost and ignore the environmental aspects of the socio-economic development, then by strong demographic pressure, and the dramatic consequences of environmental degradation and the real limitations of natural resources. In other words, we witness the current crisis in the world arising from such un-sustainability, such as the economic crisis, environmental crisis, the energy crisis and food crisis.

The concept of sustainable development represents a balanced development between economic growth, social progress and environmental protection, allowing satisfaction to the needs of present and future generations. Thus, the essence of the concept of sustainable development is to provide and ensure the continuity of the development process through the coordination of interests of present and future generations. The concept of sustainable development, from the theory aspects shows the form of concentric circles that refer to the three pillars of sustainability, such as economy, society and environment (Figure 1).

Agriculture as the main source of existential human needs and one of the important factors that contribute to social well-being is one of the main economic activities that affect the various disorders of the environment on planet Earth. In addition, agriculture is viewed through a multifunctional approach as the basis for the diversification of local economic activities and capacities in terms of improvement, and sustainability of complementary activities in terms...
of further development of rural areas. Therefore, it can be said that the development and implementation of sustainable development in the agriculture plays particular and important role, especially organic farming, and the rural areas where agriculture is traditionally viewed as the most common economic activity.

![Figure 1. Key issues in sustainable development - economy, society and environment](source: Author’s visual concept of sustainable development.)

The tendency of sustainable agriculture and organic food production is based on the use of technologies and production processes to maximize productivity while minimizing negative effects on natural resources (land, water, air, biodiversity, etc.), and human resources (rural populations producers, consumers, etc.). If we add to that the growing tendency towards the sustainable development of rural areas, we can recognize that view as the road to a more rational and efficient use of economic and natural resources, leading to better social cohesion and improved confidence in the partnership between development institutions at the micro and macro level.

According to abovementioned, it can be concluded that the integrated approach is necessary for sustainable agro-rural development, including sustainable development of agriculture, and rural development, where organic agriculture is a catalyst for this development (Figure 2). In such a way synergistic effects of development are achieved through the efficient use of economic resources, optimal management and conservation of natural resources, reasonable directing the development of social, technological and institutional changes, aiming to ensure the attainment and continued satisfaction of basic needs of present and future generations. In other words, this approach preserves land, water, plant and animal resources do not degrade the environment, it is technically appropriate, economically viable and profitable, concurrently socially acceptable.
The concept of sustainable development as a paradigm on which global contemporary socio-economic development, including agro-rural, should be based on, must equally consider economic, social and environmental aspects of development that are mutually entangled, with the trend to be sustainable. It means respecting the following basic premises:

1. Economic efficiency based on labor productivity and rational use of human resources and knowledge economy;
2. Social justice based on a broader range of capabilities meeting wider range of the existential needs of social and human development;
3. The rational exploitation of natural resources based on existing ecological capacities and biodiversity conservation regarding environmental protection.

Respect of these premises can further determine the strategic development priorities of multiple importances resulting from previously defined an integrated approach, and potential benefits, however, are (Table 1):
Svetlana Roljević, Biljana Grujić, Radojica Sarić

Table 1. The potential benefits of an integrated approach of sustainable agro-rural development

<table>
<thead>
<tr>
<th>Determinant</th>
<th>Positive agro-rural change</th>
</tr>
</thead>
</table>
| Economy     | ⇒ Stronger and more efficient rural economy  
              ⇒ Development of family farms, small producers and agro-ecotourism  
              ⇒ More stable production and income security of investments in the organic food market  
              ⇒ Reduce risk and cost of doing business in the region |
| Society     | ⇒ Improving the health of the population due to consumption of environmentally clean, healthy and safe organic food of high quality  
              ⇒ Increasing employment and improving the quality of working conditions  
              ⇒ The preservation of traditional cultural values |
| Environment | ⇒ Reduce pollution in the environment, diseases and pests in plants and animals  
              ⇒ Increase soil fertility  
              ⇒ Conservation of agro-ecosystems and biodiversity protection  
              ⇒ Environmental compatibility and organic food production |

Source: Author’s tabulation of positive changes.

It is necessary to fully integrate organic agriculture, as a central and essential part of an integrated approach through a positive perception of rural agro-environmental changes, in the concept of sustainable development, in long term strategy. This view is acceptable, regarding that the concept of sustainable development is a basic principle and a key measure of the community functioning and its quality development in the future. Through an integrated approach one can improve the quality of resident’s life and ensure a sustainable agro-rural development, which is consistent with the protection of the environment and preservation of biodiversity. Also, this means providing sufficient quantities of food at present, creating an adequate condition for future food production and optimal use of available natural resources.

The available economic resources, favorable natural conditions, the existing socio-cultural and human resources from particular area, appropriate climate, certainly contributed to the promotion of organic agriculture in the socio-economic development in terms of sustainability. If the wider context is taken into consideration, including all abovementioned, then the political-institutional dimension must be added and national and international environment obser-
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With that in mind, a conceptual framework for sustainable agro-rural development as an integral and systematic approach can be represented by the following matrix (Table 2).

Table 2. The matrix of sustainable agro-rural development

<table>
<thead>
<tr>
<th>Sustainable agro-rural development</th>
<th>Rural areas</th>
<th>Organic agriculture</th>
<th>National and international environment</th>
<th>STRATEGIC GOAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic dimension</td>
<td>Promoting and strengthening competitiveness</td>
<td>The stability of production with respect to the principle “from farm to fork”</td>
<td>Promoting comparative advantages and strengthen competitive advantage</td>
<td>Competitiveness</td>
</tr>
<tr>
<td>Environmental dimension</td>
<td>Environmental protection</td>
<td>Natural resources management</td>
<td>Participating in building an institutional framework for environmental protection</td>
<td>Protection</td>
</tr>
<tr>
<td>Socio-cultural dimension</td>
<td>Improving quality of life</td>
<td>Education through continuous learning and improvement</td>
<td>Promoting policies to create various development options</td>
<td>Equity</td>
</tr>
<tr>
<td>Political-institutional dimension</td>
<td>Strengthening the role of public and private sector</td>
<td>Strengthening the dialogue between all stakeholders in creating added value</td>
<td>Promoting national and regional policy cooperation in agro-rural development</td>
<td>Management</td>
</tr>
<tr>
<td>STRATEGIC GOAL</td>
<td>Prosperity</td>
<td>Security</td>
<td>Positioning</td>
<td>Sustainable agro-rural development</td>
</tr>
</tbody>
</table>

Source: Author’s display matrix adapted for research purposes by IICA (2007): Improving the Effectiveness of Strategies and Policies: An instrument for analysts, public decision-makers and stakeholder leaders in the field of agriculture and rural life.

Predefined matrix can be used to formulate strategic development directions and policies in order to achieve sustainable agro-rural development. Such a conceptual framework creates appropriate socially responsible conditions sustainable in the function of building human living environment of higher quality. Thus, the sustainable relationships that ensure fairness with regard to the common environment and opportunities that are provided for quality of life through health and welfare of present and future generations, and preservation of the ecosystem of planet Earth are build. In the long run, it would create the gap between rich and poor regions, and convergence of urban and rural populations by raising the quality of life of local communities, improving the overall status of the population in rural areas, thus encouraging people to stay in the less developed regions. Reali-
Rural development policy in the EU

The most important document in the EU relating to rural development covering period 2007-2013 is European Commission Regulation, No. 1698/2005. With this regulation rural development policy focuses on improving the competitiveness of agricultural and forest sector, environment, quality of life and encouraging diversification in rural economies. The European Commission has established a fund for rural development for the same period. This budget should enable the fulfillment of the planned objectives of rural development in rural areas, answer to society’s expectations for the establishment of competitive and environmentally sustainable agriculture, forestry and food sectors in rural areas of the EU. Europe’s agricultural policy is determined at EU level, and in charge for its implementation are the Governments of the Member States. The current EU policy is based on the following principles: multifunctionality of agriculture, multi-sectoral and integrated approach to rural economies, diversification of activities, creation of new sources of income in rural areas, expanding employment opportunities, protection of rural resources, decentralization and partnership at local and regional level and transparency in creating and managing development programs. With more than 56% of the population living in rural areas (91% of the territory), rural development policy represents a vital area for the EU (Action Plan 2011-2015).

Socio-economic structure of EU countries is characterized by the fact that only 18% of the total population live in predominantly rural areas, 8% of the economically active population is employed in agriculture and 20% of active rural population works in agriculture. EU agricultural production is characterized by high productivity, good equipment on the average farm size of 20 ha. The budgetary support to agriculture development dates back to the 60’s. Rural infrastructure is well developed, while the industrial structure is significantly diversified and dominated by new businesses and services (Bogdanov N., 2007).

Rural development takes place in the concept of sustainable development. Their common basis is placed in the assumption that market and non-market outcomes are produced. However, some differences were noticed. While sustainability insists on the viability of an efficient way of using resources, the multifunctionality is oriented toward multiple analyses of agricultural activities. Through policies, procedures and institutions these resources transform not only in food as a visible product, but also in employment, the benefit of local communities, clean air, healthy environment, strength of social cohesion and others (Stojanović Ž., Manić E., 2009).

During recent years the development of agricultural production and rural areas has reciprocal effects, and the goal of this activity is to highlight the impor-
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Organic agriculture in terms of sustainable development and improve the quality of life of rural population. Of course, the fact is that global demand for organic products annually increases by $5 million, thereby strengthening the economic status of rural communities and the food supply chain. Following the initiative of Directorate General for Agriculture and Rural Development of European Commission website http://ec.europa.eu was formed, as part of a campaign for raising awareness about organic agriculture throughout the EU. Its general content is tailored to consumers, manufacturers and associations involved in organic production. They cite, among other things that dealing with organic production provides greater financial security to farmers, manufacturers, distributors and retailers, and the economic benefit, directly or indirectly, overrun to other agricultural enterprises and the wider rural community. Dealing with organic production allows the recruitment of young people, given that the average age of farmers is over 60 years, creating the new areas of research (plant protection, animal welfare, renewable resources), and organic food producers gain greater respect and knowledge about the socio-economic benefits of organic production (http://ec.europa.eu).

Organic agriculture in the world and Europe

Since the beginning of 90’s of last century, the idea of organic agriculture was developing rapidly worldwide, so the area covered by method of management of natural resources increased significantly. According to the IFOAM in 1999, there were 10,993,852 ha or 0.52% of global agricultural lands covered with organic production, while in 2009 the organic production encompassed 37,172,635 ha or 0.85% of agricultural land (Figure 3). According to data collected in 2009 the most significant percentage of the world’s organic land is in Australia (32.7%), Europe (24.8%) and Latin America (23%).

![Figure 3. The organic area in the world in the period 1999-2009](http://example.com/figure3)
Source: FiBL and IFOAM research.

The most significant growth area at the global level was achieved in the period 2002-2003 amounting up 30% (Figure 4). Due to limited world resources, especially land, in recent years, organic surfaces are growing more slowly.
Research shows that more than one quarter of the world’s organic land is situated in developing countries and countries with under-developed industry in which agricultural production is characterized by low investment and high use of natural resources. Low consumption of chemical fertilizers contributed to the preservation of the main natural media where it is possible to base on organic production. As accurate data on the use of organic area in most developing countries are unavailable, it is based on estimates that most of these areas are under grasslands.

During 1999-2009 period, Europe accounted 24% of global organic surface area. According to the latest data (2009) in Europe is placed 9,204,243 ha of organic land, which represents 1.9% of its total agricultural land. The average annual growth of organic area in Europe is 9.8%, while in recent years, the rate of growth decreases (257,414 were registered as organic producers representing 14% of the total number of organic producers in the world). The largest number of organic producers, even 43,029 was registered in Italy. More than 90% of organic surfaces and 80% of organic producers in Europe belong to the European Union. Countries with largest areas under organic production in the EU 27 are Spain (1,330,774 ha), Italy (1,106,683 ha) and Germany (947,115 ha), with most of these areas placed in the process of conversion. Member States listed in the Table 3 consists of 73.5% organic surfaces as well as 67% of the total number of registered producers in the EU 27.

In Figure 5, the member states with the most significant share of organic in total agricultural area during the period 2005-2009 are listed. The most significant organic growth in total agricultural land in the period between 2005 and 2009 had Sweden, the Czech Republic and Latvia, and Italy had the lowest. The share of organic, in total agricultural area at the level of EU 27 is 4.7%.
The growth of organic production in the world represents the cause of increased demand for organic products, and higher demand is a result of increased awareness of population about the importance of preserving their own and the environment health. Although currently makes only 2% of total food sales, the world organic food market is growing much faster than other sectors of the food industry especially in developed countries. Global sales of organic food in 2000 amounted approximately 18 thousand dollars, in 2002 $23 billion, in 2006 $38.6 billion, in 2008 $52 billion, and in 2009 $54.9 billion. Since the early nineties of the twentieth century this market achieved an annual growth of 20%.1 According to IFOAM, research, the greatest awareness of the importance of a healthy food, have consumers in North America and Europe, so that these two regions make up 97% of global sales of organic products.

Across Europe, the share of organic food and beverages in total sales ranges from 4.5% in Switzerland and Denmark, up to 3% in Germany, or approxi-

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mately 2.5 in the UK. Market research by IFOAM indicates that for only one year (between 2005 and 2006), local organic food market achieved high growth rates of 20% in the UK, 18% in Germany, 10%, in Austria to 9% in Netherlands. According to the available information, the biggest market of organic products in 2006 was Germany with a turnover of 4.6 billion Euros and the UK with a turnover of 2.83 billion Euros. The highest consumption of organic products had Switzerland with more than 100 Euros spent on the purchase of organic produce per capita. As a result of high demand for organic products, there was a shortage of them across the EU. In Germany (the country with the largest organic food market in Europe) in 2007 the scarcity of organic grains, milk, meat and some vegetables was noted, and the increase of these products prices was noticed. Austria has also felt the problem of shortages during the observed year, mainly cereals and some fruits and vegetables (in Austria the share of organic agricultural land in total is app. 13%).

Bearing in mind that demand for organic products continue to grow, primarily in developed countries, and that the natural resources on which organic farming can be practiced in most EU member states are increasingly limited and decreasing, less developed countries that have preserved natural resources must join for establishing the organic production as one of the solutions that will ensure the stability of organic farming in the European Union enabling more balanced rural development.

Rural policy, rural areas and rural economy in Serbia

Rural development policy in Serbia is under the Ministry of Agriculture, Commerce, Forestry and Water Management competency. Law on Agriculture and Rural Development (RS Official Gazette, No. 41/09) was adopted in May 2009. While rural development is becoming increasingly important pillar for the conduct of agricultural policy, it is estimated that this issue has not achieved an adequate attention. Republic of Serbia has no official definition of rural areas. The division into urban and rural areas is based on municipal decisions which the status of the city (urban) has given to a settlement within a general urban plan (National Rural Development Programme from 2011 until 2013; 2011). In Serbia, the area is considered as rural if agricultural and forestry production is prevailing. According to this definition, about 70% of Serbian land can be brought into category of rural areas, inhabited with app. 43% of the total population. As defined by the Organization for Economic Cooperation and Development (OECD), an area whose population density is below 150 inhabitants per km² belongs to the rural areas. Under this definition rural areas in Serbia include 85% of its territory with 55% of the population (Action Plan 2011-2015), forming 41% of gross domestic product and providing 50% of employment (Janković S., 2009). Population density in rural areas is 63 inhabitants per km², which is 1/3 less than the national average (Bogdanov N., 2007).

However, in order to establish appropriate policies for rural development, it is necessary to solve first the problem of diversity in rural areas of Serbia, which has long been present. Rural areas in Serbia and differences in the characteristics of the area economy are shown in the table below (Table 4).

Table 4. General characteristics of rural areas in Serbia

<table>
<thead>
<tr>
<th>Economy characteristics</th>
<th>Rural area</th>
<th>Features of agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>High agricultural productivity and integrated economy</td>
<td>Vojvodina and northern parts of central Serbia around the rivers Sava and Danube</td>
<td>High productivity, better the structure of agricultural holdings, the vertical connection to the processing facilities</td>
</tr>
<tr>
<td>Urban economy with agriculture, which depends on labor</td>
<td>These areas are located along rivers, on the main roads in central Serbia, and/or around urban centers</td>
<td>Agricultural production is intensive and market-oriented, while the environment is threatened in some areas due to the existence of outdated industries</td>
</tr>
<tr>
<td>Economy based on natural resources</td>
<td>The mountainous regions in the southeastern part of Serbia</td>
<td>Extensive agriculture, light industry, dependence on natural resources</td>
</tr>
</tbody>
</table>


Serbia had 363,642 registered agricultural households in 2008. Most agricultural households have small farms consisting of several parcels. In the structure of created value of agricultural production 59% comes from crop and 41% from livestock production. Productivity is below the EU average due to lack of funds and low use of farm inputs. The production structure is dominated by grains, and most productive culture is corn. Total trade in agricultural products in 2007 amounted to 2,806 billion dollars, with a surplus of 574.5 million dollars. Agriculture at the moment is not a major polluter of the environment (Rural Development in Serbia, http://www.exchange.org.rs/).

The rural economy of Serbia cannot be considered as satisfactory. Specifically, the economic structure of rural Serbia is heavily dependent on primary sector, especially agriculture and even the exploitation of natural resources. The high share of agriculture, food processing, mining and energy and a low share of tertiary sector in GDP achieved the basic characteristics of the economic structure of rural Serbia. Achieving higher levels of income diversification is limited by several factors: a disadvantage of the agricultural sector and rural areas in development policies, unfavorable capital market, limited market for products and services, lack of trained human resources and low level of private enterprise and others (National Rural Development Programme from 2011).

Achieving higher levels of income diversification is limited by several factors: a disadvantage of the agricultural sector and rural areas in development policies, unfavorable capital market, limited market for products and services, lack of trained human resources and low level of private enterprise and others.
(National Rural Development Programme from 2011 until 2013: 2011). The lowest diversified income has households in Vojvodina, whose 61% of agricultural income comes from sales of agricultural products, of which 70% is wheat. The greatest degree of diversification of agricultural households has incomes of the Western Serbia, where incomes are significantly diversified within farming and livestock (Cvejić S., M. Babović, M. Petrović, N. Bogdanov, O. Vuković, 2010). In rural areas of the Republic of Serbia, GDP per capita is for a quarter lower than the national average and indicates a significant lag in development. The share of agriculture in GDP of rural areas is app. 30%, which is significantly higher than in other transition countries. Partial explanation may be found in the rich resources for agricultural production as are Serbian, and on the other hand, productivity and intensity of agriculture in Serbia are significantly below the European average and represents the reason for the adverse living standards of farmers.

One of the characteristics of changes in the agrarian structure of Serbia during the transition is the transformation of state/public property to private. In addition, investors do not have redeemed private lands, small peasant farms, but large estates with necessary infrastructure, machinery and facilities. Changes in the structural characteristics of the past five years are as follows: number of farms is decreasing; structure of households by size property indicates the dominance of small farms (farms with less than 5ha make up 73% of farms), the average size of agricultural land owned by farms was reduced to 4.34 ha, but surface of used land by farm increased to nearly 5 acres, which indicates the activation of land markets (National rural Development Programme from 2011 until 2013: 2011). Particularly vulnerable population groups in Serbia are those that generate income solely from agriculture, because bad living conditions are directly exposing them to poverty. Poverty indicators by types of settlements, according to the SBS methodology are given in the following table (Table 5).

<table>
<thead>
<tr>
<th></th>
<th>Population structure</th>
<th>Percentage of the poor</th>
<th>Structure of the poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>56.4</td>
<td>58.5</td>
<td>11.2</td>
</tr>
<tr>
<td>Rural</td>
<td>43.6</td>
<td>41.5</td>
<td>17.7</td>
</tr>
<tr>
<td>Index Rural/urban</td>
<td>1.6</td>
<td>2.3</td>
<td></td>
</tr>
</tbody>
</table>


Based on table review it can be concludes that poverty is still significantly widespread in rural more than in urban areas (9.8% versus 4.3%, 2007). Observing the structure of urban and rural population in 2002 and 2007, it was noticed that the rural population is reduced by 2.1% which is proportional to the increase of urban population However, although the percentage of rural
population declined, the share of poor population in this category increased by 6.4% (from 55% in 2002 to 61.4% in 2007). In order to reduce poverty among the rural population, it is necessary to have an impact to increase income from agriculture, which will be paid from the agricultural budget. During 2004 from the agricultural budget, to promote rural development, Republic of Serbia spent 1,255 billion dinars. During 2010 has allocated 2,395 billion dinars, and provided funds for next year are three times higher than for 2004 amounted to 4,000 billion dinars (http://www.pkv.rs/). The possibility of achieving sustainable development of the Republic of Serbia is in introducing, adapting and applying the principles prevailing in the EU and increasing competitiveness based on knowledge, innovation and entrepreneurship. In general terms, sustainable economic development of our state should provide steady long-term economic growth that will be based on excessive use of natural resources or with unacceptable environmental consequences which could call into question its sustainability, and economic prospects of future generations. This means that the development of Serbian economy toward sustainability can only be seen on the basis of achieving economic growth, primarily based on knowledge, information, people, education and quality of relationships among people and institutions.

**Organic agriculture in Serbia - potentials, constraints and market**

Favorable climatic conditions and still preserved natural environment give Serbia an advantage over other countries in establishing and increasing area under organic production. This confirms the fact that even a 5 to 10% of the land is pure and ready for this kind of production, while, for example, in Italy this percentage is much lower, ranging from 1.5 to 1.7% in the range. Also, Serbia is characterized by the smallest consumption of pesticides and mineral fertilizers per hectare of arable land in the region. In the period 1990-2000 the use of pesticides has decreased by 90%, which in itself is an excellent prerequisite for the establishment of organic food production systems.

Research shows that Serbia has currently app. 230,000 ha covered with organic production in which one part consists of certified and other is in the conversion period. About 96% of the total area covered with organic production are certified for harvesting from nature (app. 201,000 ha). Organic arable area spread over 8,500 hectares, representing about 4% of the total organic area in Serbia and the rest consists of meadows.

About 60% of organic arable land is covered with permanent crops, 27% with pastures and 14% with vegetable crops. Regional distribution with organic production is similar to the conventional, and most of the vegetable and crop production is concentrated in Vojvodina, while fruit production is practiced in Central Serbia. The structure is dominated by the production of vegetable growing; cabbage, paprika, parsley, carrots, peas and kale, the most grown field crops are wheat, barley, rye, triticale, corn, soybeans and sunflowers, while
the most common fruit production is oriented toward apple, plum, raspberry, cherries and strawberries. The total number of registered farms in 2008 was 363,642 and only 3,000 small farms is engaged in organic production, respectively 0.8%. The largest number of organic farms practice organic production in areas smaller than 5 ha.

Table 6. Structure of growing crops on organic arable land in Serbia 2010

<table>
<thead>
<tr>
<th>Crop</th>
<th>Certified surface (in ha)</th>
<th>Surface during conversion (in ha)</th>
<th>Total (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growing crops</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apple</td>
<td>650</td>
<td>550</td>
<td>1,200</td>
</tr>
<tr>
<td>Raspberry</td>
<td>360</td>
<td>20</td>
<td>380</td>
</tr>
<tr>
<td>Strawberries</td>
<td>80</td>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td>Plum</td>
<td>420</td>
<td>170</td>
<td>590</td>
</tr>
<tr>
<td>Cherries</td>
<td>100</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>Else</td>
<td></td>
<td></td>
<td>2,560</td>
</tr>
<tr>
<td>In total</td>
<td></td>
<td></td>
<td>4,970</td>
</tr>
<tr>
<td>Annual crops</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corn</td>
<td>20</td>
<td>210</td>
<td>230</td>
</tr>
<tr>
<td>Wheat</td>
<td>40</td>
<td>130</td>
<td>170</td>
</tr>
<tr>
<td>Soy</td>
<td>10</td>
<td>400</td>
<td>410</td>
</tr>
<tr>
<td>Vegetables and other crops</td>
<td></td>
<td></td>
<td>427</td>
</tr>
<tr>
<td>In total</td>
<td></td>
<td></td>
<td>1,240</td>
</tr>
<tr>
<td>Grasslands</td>
<td></td>
<td>50</td>
<td>2,240</td>
</tr>
</tbody>
</table>


Limitations regarding serious implementation of organic agriculture in Serbia have several levels, an indicator of organic production risk in Serbia is the fact that no farm is growing only organic crops in the entire farm. Participation of the organic farms in a total area is not exceeding 25%. According Roljević et al. (2010) from the standpoint of production organizing there are various problems (limitations), among which are:

1. **Insufficient knowledge and information on methods and certification of organic production** (lack of connection between science and practice);
2. **The reluctance of farmers to accept innovations, lack of entrepreneurial spirit, lack of marketing orientation** (the sparse activity of the brand development, winning new foreign markets, lack of joint presentations at international trade fairs);
3. **Insufficient financial strength of farmers for new investments** (high cost of obtaining certification for organic production, and limited investment opportunities for the organization of production over large areas).

In the production process, farmers are met with a few limitations:

1. **It is very common that the market does not have organic seeds**;
2. **In Serbia every other manufacturer of organic crop practices without livestock breeding causing inability to supply its production with organic fertilizer which is a key source of nutrients in organic production and in optimum yield creation**;
3. **Means for plant protection permitted in organic production are often inaccessible to producers.**
Organic households often do not have warehouses and storages and the organic products are available only in high season. Sorting is usually done only by size, rarely by quality. Packages are usually plastic, products are dissipated, and the possibility of a long transport in this form is excluded. Due to lack of financial buyers to afford high quality products, nearly 90% of organic products from Serbia is directed towards exports to markets of EU, US and Japan. It is estimated that the turnover of organic products in 2009 amounted to 20-25 million Euros. The slow development of local markets has significantly limited the development and sustainability of the organic sector in rural areas of Serbia. Developing countries are particularly burdened with a lack of new technical and technological solutions and scientific knowledge about organic production methods, with the understanding and adoption of the concept of organic farming, which contains the goal of achieving social, environmental and economic sustainability. When Serbia join the European Union the abovementioned restrictions could be overcome, in a shorten term, through aspiration of knowledge, practices and resources dedicated to the development of organic farming in the EU. In return the EU would receive valuable capacities for the establishment and expansion of organic farming and thereby ensure the supply security of its customers.

Conclusion

Long-term observed, providing the sustainable agro-rural development is of great significance in order to perceive, on an equal footing, the economic, social and ecological aspects of development, mutually interweaving, even confronting. Through this integral access provides a synergetic developmental effects regarding efficient use of economic resources, optimal management and preservation of natural resources and continuous satisfaction of existential needs, as for the existing, as well as for the future generations. One of the sustainable agro-rural development’s catalysts is surely the organic production, from the aspect of creating appropriate socially responsible terms, in terms of making better environment for humanity. Realizing the sustainable agro-rural development for many countries in the world, therefore in Serbia too, represents the strategic development goal and comparative advantage when it is about the organic food production, as a guarantee for sustainable future. As the Republic of Serbia has high potentials for the organic production development, but not enough assets to support this production, a benefit from accessing the European Union would be reciprocal:

- **Serbia to the European Union could offer an excellent basis for expansion of organic farming systems, which would thus ensure a safe supply of its customers and expanding export assortment of organic products to the global market;**
- **Limitations to intensify the development of organic farming in Serbia could be overcome, in a shorten term, through aspiration of knowledge, practices and resources dedicated to the development of organic farming in the EU.**

Expanding the organic production would influence other activities’ development in rural areas, which would, all together, be responsible for rural revitalization and make a stimulating factor for further development of rural areas in the Republic of Serbia.
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http://www.pkv.rs/pkv/files/radnitekstAgrarnibudzet(5).doc
