Model of Production and Marketing in Agricultural Products in the context of Sustainable Development

Bragă Viorica, Dragomir Robert, Avram Laurenția, Hurloiu Lăcrămioara, Năftănăilă Cristina
Spiru Haret University, Campulung, Argeș, România
viobraga@yahoo.com, robert73d@yahoo.com
www.ccefa.spiruharet.ro

Abstract: Throughout this article, we present issues concerning the production and the marketing of the organic food. Note that Romania is among the top of the 20 exporters of such products worldwide. These products are sourced from the organic agriculture, respecting the national and European legal regulations of the production, marketing and labelling. We will also capture the evolution of this sector through the principal key indicators such as the agricultural cultivated area, the annual plant production, the annual production of the livestock.

Key-Words: organic products, sustainable development, methods of production, cultivated area, annual production

1 Introduction
The best known definition of the sustainable development is certainly that given by the World Commission on Environment and Development (WCED) in the “Our Common Future” report, also known as the Brundtland Report [1]: “The sustainable development is the development that aims to satisfy needs of present without to compromise the ability of the future generations to satisfy their own needs”.

Surely, the sustainable development, in general, involves the development of the organic farming. The organic farming helps to protect the future generations by preventing the soil erosion; protects the water quality; energy saving, removing chemicals from food, protects the health of the farmers, supports small farmers, supports the real economy, promoting the biodiversity, trying to a better taste.

The objectives, principles and rules applicable to the organic production, are contained in the community and the national legislation in this area. These rules, along with defining the method of production in the plant and animal breeding, covers the following issues related to the organic farming system: labelling, processing, inspection, marketing and imports.

Environmental goods and services
The products that are the subject for the environmental market, in addition to food include: products and cleaning (various detergents), construction, household appliances (refrigerators, washing machines, televisions, vacuum cleaners), lighting equipment (for categories of the street lighting and interior lighting), wood products and wood panels, metal, plastics, textiles, footwear, paints and varnishes, polyurethane foams used in the production of furniture, IT equipment, copying paper and even buses and the auto vehicles.

Furthermore, by approval and publication the G.D. 1855/2005/CE, establishing the ecological criteria for eco-label for tourist accommodation services [1] and the GD 1587/2006, establishing the ecological criteria for eco-label for campsite services [2], the organic market has expanded, including those services.

The organic food product is derived from ingredients from organic agriculture. The term: “organic farming” is protected and attributed by the EU and assigned to Romania agriculture to define this system and is similar to the terms "organic agriculture" or "biologic agriculture", used in other Member States.

This system of agriculture is a “modern” process to grow plants, to raise animals and to produce food, which differs fundamentally from conventional agriculture.

The role of organic farming is to produce food cleaner, more appropriate body metabolism, but in complete correlation with the preservation and development the environment, respecting for nature and its laws. One of the main goals of the organic farming is the production of the food with taste, texture and quality genuine and attractive.

The organic farming has a major contribution to the sustainable development, increasing economic activities with an important added value and increase interest in the countryside.
According to the O.G. 34/2000 [3], the organic production, means the production of food, without chemical synthesis under the organic production rules, established by same order, which follow the standards, guidelines and national specifications and are certified by inspection and certification body, established for this purpose.

The ecological agricultural production, aims, the achievement of the sustainable farming systems, diversified, balanced and safeguard of the natural resources and consumer health. Impact of the organic production on the environment is minimal.

2 Requirements for production and marketing of the organic food

The objectives, principles and rules of the organic production, are contained in Community and national legislation in this area. These rules, along with defining the method of production in the plant and animal breeding, covers the following issues related to organic farming system: labelling, processing, inspection, marketing and imports.

In our country, the bases of this type of production were released in 2000, when the Ordinance no. 34, on ecological agricultural products, has established the National Authority of the Ecological Products, subordinated to the Ministry of Agriculture and Food, in order to ensure compliance with specific legal provisions and monitor the organic production methods of food products.

The National Authority of the Ecological Products, to achieve its objectives, has the following main tasks:
- develop the national Program for the organic farming;
- initiate the projects of normative acts on the organic farming;
- issue and periodically review the specifications for organic products;
- develop the rules and testing standards, the marketing certification of the organic food, respecting the rules of international organizations;
- record and keep evidence of the days of the operators, individuals and legal entities producing, preparing or importing / exporting the agricultural products;
- accredit individuals and legal persons of public and private, for inspection and quality tests for the organic production;
- monitor and supervise the work of inspection and certification bodies accredited;
- approved the Program for inspection and certification by accredited bodies;
- withdraw the accreditation of the inspection and certification bodies that break the rules and regulations adopted;
- organize training programs and training of operators in organic farming;
- liaises with international bodies specialized in the organic farming.

The organic food production, place the following requirements:
- the principles of the organic production;
- non-use the fertilizers and soil enhancers, pesticides, feed materials, feed additives, ingredients for food, the substances used in the animal nutrition, substance helpful for preparing feed, cleaning and disinfection products for animal housing and other products, than those allowed to be used in organic farming;
- use of seed or vegetative propagating material obtained by methods of organic production;
- are packaged and transported to the point of sale, in sealed containers.

The basic principles of the organic food production are:
- elimination of all polluting technologies;
- development of the production structures in which the principal role is hold by races, species and varieties with high adaptability;
- continuing support and improve the natural soil fertility;
- livestock integration in the plant production system and plant products;
- economic use of conventional energy resources and replace them by the rational use of reusable products;
- application of the technologies for both the crop production and livestock to satisfy the requirements of species, varieties and breeds.

Conversion of existing conventional food production systems can be done in accordance with national and international environmental standards in a given period specified for each activity, as follows:
- 2 years for annual field crops;
- 3 years for perennial crops and plantations;
- 2 years for grassland and forage crops;
- 12 months for cattle for meat;
- 6 months for small ruminants and pigs;
- 12 weeks for animals to plants;
- 10 weeks for hens to produce eggs or meat, bought at 3 days;
- 1 year for bees, when the family was bought from conventional apiaries.

The labelling of organic products is made after the following rules:
- name and address of the manufacturer or processor;
• product name, including the method used in the organic production;
• name and mark of the inspection and certification body;
• storage conditions;
• the minimum period of validity;
• prohibit the storage of organic products in the same area, among other products.

The labels will contain a specific logo for organic products checked, registered with the State Office for Inventions and Trademarks issued and affixed to the certification system, indicating that the product is under the organic production rules.

Also, the label of organic foodstuff may occur and the words "Organic Farming Ecorom - RO Control System", unless the products follow the requirements:
• were obtained by methods of organic production;
• have undergone inspection throughout the production cycle, processing and marketing;
• have been produced or prepared by operators of food products, which were screened by accredited certification bodies and inspection;
• are packaged and transported to the point of sale, in sealed containers.

Under the current legislation, it is compulsory registration of the operator of organic food products at the National Authority of Organic Products, the information about it referring to: name and address; premises and plots the location where the operations are conducted; nature of the operations and products; operator's commitment to operations in accordance with the requirements regulated; name of the inspection and certification, the operator shall record, for inspection unit / his firm.

3 Evolution of the main indicators of the organic farming

By the year 1990, although in many European countries, for some time, farming practices and improved technologies in this respect, Romania, on the whole agricultural area is producing only conventional system, perhaps with a few exceptions, namely, the pastures of hill-mountain area, where natural flesh and not use any synthetic product, but without being recognized or set it somewhere. (www.fermierul.ro)

In the National Export Strategy 2005-2009, states that organic farming is a new sector in Romania, taking into account that our country enjoys the appropriate conditions to promote organic farming as the soil fertile and productive and a lack of negative impact as that because developed countries use chemicals and related technologies.

Potential productive agricultural ecological system of our country can reach up to 15-20% of total agricultural areas largest, is concentrated in the hill-mountain area, where technology and operational maintenance of pastures were based on traditional methods - organic (manure application, mining by grazing and / or mowing, the use of clover as forage crop and the soil fertility improvement methods, using mixed plant-animal breeding), but not negligible, no arable land in the area.

Areas cultivated in the organic, increased by 12.69 times, from 17 438 ha in 2000 to 221,410 ha in 2008, with 16.4% increase compared to 2007. (Table no. 1 and fig.no.1).

Figure 1. Total areas cultivated (ha) in the organic farming

Source: Ministry of Agriculture and Rural Development

Share of area cultivated in the organic farming in total arable land in Romania (9.4 million hectares) increased from 0.19% in 2000 to 2.36% in 2008. The main organic crops are represented in most of the forage crops and pastures (27.10% of the total in 2008) cereals, spontaneous flora, oilseeds and protein (Table no. 1 Fig. no. 2).

The livestock farmed organically, including sheep and goats 78,076 heads in 2007), dairy cows (6265 heads - 2007) and laying hens (ends 4720 - 2007)

Total production plant in 2008 totalled a quantity of 266,200 tonnes, representing an increase of 19.7 times the production in 2000. (Table no.2 and Fig. no.2).

The final gross production of agricultural products (VPA) is the sum of intermediate consumption (IC), the cost of capital (CK) and labor (CM) to which is added to the residual value of profits mass (B).

VPA = CI + CK + CM + B (1.1)

Except for the mass profits-which is a residual
value-irrespective of the specific points of the measurement and summing in a common unit of its constituents; in principle each component of the relationship can be decomposed as a product of two factors, one of the quantitative nature and the other as a price. Thus, $VPA = Q \times PA$

where:

$Q = \text{the volume of the agricultural production}$;

$PA = \text{the price of the agricultural production}$. 

$CI = F \times PF$

where:

$F = \text{the volume of material factors that form the intermediate consumption}$;

$PF = \text{the price of material factors (related to consumption), non purchased}$;

$CK = K \times pk$

$K = \text{the stock of physical capital}$;

$pk = \text{price of annual use of physical capital stock (for example, annual interest)}$

$CM = N \times PM$

$N = \text{the number of workers}$;

$PM = \text{the labor price}$

Figure 2. The structure of cultivated land in the organic farming

<table>
<thead>
<tr>
<th>The structure of the crops in 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
</tr>
<tr>
<td>Pastures and hayfields</td>
</tr>
<tr>
<td>Oleaginous and protein</td>
</tr>
<tr>
<td>Vegetables</td>
</tr>
<tr>
<td>Fruits</td>
</tr>
<tr>
<td>Collection of spontaneous flora</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture and Rural Development

The livestock production is formed from cow’s milk, sheep’s milk and eggs. In 2007 there were 85,031 hl cow’s milk compared to 122,000 hl in 2006, lower production being 43.34%. Also production of ewes fell by 16.7% from 15,500 hl in 2006 to 13,273 hl in 2007.

In the “processed products”, there is increasing processed milk products, and tripling the production of organic honey, and from 610 tonnes in 2005 (table no.2), to 1950 tonnes in 2007. The number of operators engaged in this farming system has increased by 9.31% from 3834 registered players in 2007, the 4191 operatori registered in 2008. Thus, of the 4191 entrants in 2008, 3947 of them are producers, 85 are processed, and 159 of those registered are traders.

Figure 3. Total operators 2007

4 The organic products market in Romania

The organic products grown mainly in Romania are cereals, oleaginous plant, berries, vegetables and fruit, since 2006, Romania has also produced: bread, sunflower oil, soy beverages, apple juice and medicinal teas.

Recent studies of the Romanian Academy estimate that in Romania, sales of organic agricultural products reached about 2 million per year, which means almost 1% of the total food market, the Romanians still prefer traditional because of the lower prices, compared with the organic products.

In 2008, it was exported about 130 thousand tons of organic products with a value of approx. 100 million Euro, representing an increase of approx. 20%, compared to 2007.

The main products exported were: oleaginous and protein, grain, berries and mushrooms, dairy products, honey and derived products, sunflower oil, etc. Romanian products have been marketed in Germany, Italy, Greece, Switzerland, Netherlands and France.

The value of the imports in 2007 was approx. 3 million Euro, compared to 2 million Euro in 2006. The main products imported were: brown sugar cane, coffee, chocolate, beverages made from soy, juices, etc.

According to Radu Panait, the general manager of...
the organic nature of Land, “the market share of organic products will arrive in Romania, about 2% over the next five years, the country currently accounts, major development trends in this sector than other European countries”.

5 Conclusions
In conclusion, we can say that organic farming practice has both advantages and disadvantages. The main advantages and opportunities are:
• use natural resources in a sustainable manner;
• use traditional technologies which benefit developing countries and constitute an important prerequisite for food security at the local level;
• obtaining food with good nutritional quality and safe to eat;
• ensure higher income farmers because the prices of organic / biological / organic are higher;
• employment in the rural areas as the work is intensive;
• labour required in the organic farming is more, benefit developing countries, where cost is lower;
• demand for organic products, created new export opportunities for developing countries.

Disadvantages and constraints:
• gain obtained due to the difference in price will decrease over time as demand equals supply of organic products;
• existence of different national standards, creates difficulties in ensuring a fair trade of organic products.
The producers can take advantage of quality “ecological” if it is not recognized in the importing country’s own standards. In some cases, the importing country may refuse products, this actually becoming a technical barrier (non-price).
The organic farming is a dynamic sector in Romania, which has undergone in recent years an upward trend, both in the plant and livestock sector. Organization of marketing their products is an important element in the pathway of organic farming. Marketing of the organic products is only registered traders to MAFRD (Ministry of Agriculture Forestry and Rural Development), through various channels to market: farm-gate sales, sales through wholesale stores, sales in specialized stores, sales from stock online line for green products (www.agricultura-ecologica.ro), sales in the seasonal markets.
One of the essential conditions for development of the organic farming is to promote the concept of organic farming, to raise awareness of consumers, the benefits of consumption of organic products, so they offer a higher price for clean products, whose quality is guaranteed by a control body.

For the information of manufacturers, training and promoting the concept of organic farming, are made by public and private organizations.

In conclusion, organic agriculture and food production can help to re-launch the Romanian agriculture and other sectors of the economy, putting the bases of the sustainable development.

References:
### Table 1. Evolution of the surface and livestock in the organic agriculture

<table>
<thead>
<tr>
<th>SPECIFICATION</th>
<th>U.M</th>
<th>MADE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2000</td>
</tr>
<tr>
<td>1. Total area d.c:</td>
<td>ha</td>
<td>17438</td>
</tr>
<tr>
<td>Cereals</td>
<td>ha</td>
<td>4000</td>
</tr>
<tr>
<td>Pastures and hayfields</td>
<td>ha</td>
<td>9300</td>
</tr>
<tr>
<td>Oleaginous and protein</td>
<td>ha</td>
<td>4000</td>
</tr>
<tr>
<td>Vegetables</td>
<td>ha</td>
<td>38</td>
</tr>
<tr>
<td>Fruits</td>
<td>ha</td>
<td></td>
</tr>
<tr>
<td>Collection of spontaneous flora</td>
<td>ha</td>
<td>50</td>
</tr>
<tr>
<td>Other crops</td>
<td>ha</td>
<td>50</td>
</tr>
<tr>
<td>2. No animals d.c:</td>
<td>head</td>
<td>x</td>
</tr>
<tr>
<td>Dairy cows</td>
<td>head</td>
<td>2100</td>
</tr>
<tr>
<td>Sheep and goats</td>
<td>head</td>
<td>1700</td>
</tr>
<tr>
<td>Hens eggs</td>
<td>head</td>
<td>-</td>
</tr>
</tbody>
</table>

**Source:** Ministry of Agriculture and Rural Development

### Table 2. Evolution of production in the organic agriculture

<table>
<thead>
<tr>
<th>SPECIFICATION</th>
<th>U.M</th>
<th>MADE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2000</td>
</tr>
<tr>
<td>1. Total production plant d.c:</td>
<td>to</td>
<td>13502</td>
</tr>
<tr>
<td>Cereals</td>
<td>to</td>
<td>7200</td>
</tr>
<tr>
<td>Oleaginous and protein</td>
<td>to</td>
<td>5500</td>
</tr>
<tr>
<td>Vegetables</td>
<td>to</td>
<td>600</td>
</tr>
<tr>
<td>Fruits</td>
<td>to</td>
<td></td>
</tr>
<tr>
<td>Collection of spontaneous flora</td>
<td>to</td>
<td>200</td>
</tr>
<tr>
<td>Other crops</td>
<td>to</td>
<td>2</td>
</tr>
<tr>
<td>2. The livestock production d.c</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Milk Cow</td>
<td>hl</td>
<td>58367</td>
</tr>
<tr>
<td>Ewes</td>
<td>hl</td>
<td>701</td>
</tr>
<tr>
<td>Eggs</td>
<td>thou and pieces</td>
<td>-</td>
</tr>
<tr>
<td>3. The main processed products</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Feta sheep</td>
<td>to</td>
<td>18</td>
</tr>
<tr>
<td>Schweitzer</td>
<td>to</td>
<td>23</td>
</tr>
<tr>
<td>Cheese</td>
<td>to</td>
<td></td>
</tr>
<tr>
<td>Canned fruits and vegetables</td>
<td>to</td>
<td></td>
</tr>
<tr>
<td>Honey</td>
<td>to</td>
<td>10</td>
</tr>
</tbody>
</table>

**Source:** Ministry of Agriculture and Rural Development