ECOLOGICAL AGRICULTURE – ENGINE OF SUSTAINABLE DEVELOPMENT IN ROMANIA

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The development of organic farming is seen as the only alternative for the third millennium. The relation agriculture - food - health is increasingly obvious, because most of the "diseases of civilization" are attributed to the inadequate quality of diet, following the excesses of use of chemicals in intensive technology and as such the market of "bio" products is more demanded and more appreciated. Ecological agriculture minimizes global environmental problems such as acid rain, global warming, reduction of biodiversity and desertification. Organic farming has a great contribution to a lasting economic development and plays an important role in the improvement of the environment, preservation of soil, improvement of water quality, biodiversity and protection of nature and may move ahead in the rural economy and make it viable by expanding economic activities with high added value and generate jobs in rural areas.

Keywords: ecological agriculture, organic farming, organic products, biodiversity.

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The development of organic farming is seen as the only alternative for the third millennium. The relation AGRICULTURE - FOOD - HEALTH is increasingly obvious, because most of the "diseases of civilization" are attributed to the inadequate quality of diet, following the excesses of use of chemicals in intensive technology and as such the market of "bio" products is more demanded and more appreciated.

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.

One of the essential conditions for the development of organic farming is to promote the concept of organic farming in order for consumer to become aware of the benefits of organic products' consumption so that they offer a higher price for cleaner products whose quality is guaranteed by an inspection body.

Europe and especially Western countries have began to organize this activity since the years 1935-1940, but the first signs of recognition of the productive and commercial activity dates from the year 1980, when organic farming is recognized both by the market, and by governments, national and international organizations. After 1990, the development becomes spectacular, and at the level of 1997 organic farming in Western Europe will hold a share of 0.44% of the agricultural area, and 1,995,435 ha, and in 1999 reaches 2.1% of total and 2,858,339 ha. Countries like Italy, Australia, Spain, UK, Germany, France etc. may be given as example in this respect.

Recent statistics published by SOEL - SURVEY, INFOAM, EUROSTAT, and USDA show that organic farming is rapidly growing, being used in over 100 countries across 5 continents, including successful and concerns in many other countries.

In 2005, the largest number of organic farms was in Italy (56.4 thousand hectares), Turkey (18.4 thousand hectares) and Austria (18.3 thousand hectares) and the percentage of the largest number of organic farms was in Liechtenstein (28%), Switzerland (10.2%) and Austria (9.3%).

Organic farming creates a strong link between the rural and metropolitan environments of the European Union and brings huge social and financial benefits for the members of these communities. Organic processors and retailers and distributors are equally interested in the aims

of farmers practicing organic farming in particular - to obtain fresh and authentic food by processes designed to respect nature and its systems.
The most important principles for processing organic products include: - restricting the use of additives and additional substances that may be used in preparing organic foods; - restricting the use of synthetic chemicals; - to prohibit the use of genetically modified organisms (GMOS).
While organic farming seeks to keep in touch with its traditional roots and keep the harmony with nature, the processing of agricultural eco products reflects the abundance of tastes and culinary preferences of the modern consumer. So, in addition to the wide range of fruits, vegetables and delicious meat, modern organic products can and even include baby food, wines made from organic grapes, beer, yogurt, cakes, pastry, breakfast cereals, juices fruit, coffee, tea., etc.
Because farmers practicing organic farming tend to choose varieties of plants and animals less known, but which have a greater resistance to pests and diseases and better adaptability to local and seasonal conditions, the processing of organic products has a wider range of products.
While organic farming is a modern production of food, its roots are in the traditional agriculture and keeps knowledge of these system – such as: - work in harmony with nature and never against it - multi- annual rotation of crops; - use of manures as fertilizer and cultivation only of what the farm can produce naturally, instead of using chemical fertilizers and other inputs; - stimulating natural resistance to diseases and pests in plants so as to animals, instead of using pesticides and veterinary products; - ensure regular exercise for the animals, access to quality food and grazing in the open air to maintain health.
But farmers who practice organic farming use modern technology and research and development, allowing the development of organic farming in its traditional framework. For example, these may include: - analysis of soil and crop rotation and balancing the meadows, on the basis of scientific knowledge, to ensure correct content of nutrients for crops; - identify and fine balance of ingredients in animal food to ensure the food and nutritional needs of different animal species; - use of specialized equipment, such as the mechanic weeds rake to control weeds without using herbicides; - analysis of data for modern research to choose most suitable plant varieties for organic crops.
The increase of consumer demand for organic food has created opportunities for all sectors in the chain of production, distribution and marketing, which have contributed to an increase of the economic and social development of many rural areas in the EU. The annual growth of the market for organic products is 10-15%. Besides providing greater financial security of producers, processors, distributors and retailers of organic products, the economic benefits of this trend will inevitably have an effect on other businesses in rural areas and the whole rural community - both directly and indirectly.
The importance of organic farming extension follows from the following **benefits**: - Less contaminated products of agriculture, water and air. Non pesticides (herbicides, insecticides, fungicides) determining a substantially lower risk of contamination of agricultural products. This means that agricultural products are healthy organic products, safe for human and animal consumption. - Safe working conditions for farmers. It is well known that many farmers die annually due to pesticide use, particularly in third world countries. Even in countries where agriculture is modern and where knowledge of labor safety is well known, the rate of certain forms of cancer among farmers is higher than in the vast mass of population, which is caused by the use of pesticides. - Biodiversity. Use of pesticides is a threat to both plants and animals, and humans. Pesticides threaten the survival of certain species of wild plants and animals, but more than that, their use limits in general crop biodiversity in neighboring areas. Soil fertility and health are maintained through organic practices such as crop rotation, manual works, pullulate, composting and mulch. Conventional agriculture has resulted in lower organic matter content in soil and accumulation of toxic compounds through the use of pesticides. By using organic fertilizers in organic farming it is maintained and increased the percentage of soil organic matter.

- Lower losses of nutrients through water transportation. Intake of organic fertilizers and non-chemical fertilizers reduce the risk of nutrients laundering, an enormous problem in many countries and a threat to drinking water and lakes, rivers, seas and oceans. - Reduce soil erosion. Both the soil and soil erosion reduction can be achieved by keeping the land covered as much as possible, either by mulch, or the cultivation of cover crops. - Better management of water factor. Soil improvement (increase in organic content and improvement of structure) and a better coverage of it (mulch, crop protection etc.) lead to reduction of water in organic agriculture. High content of organic matter in soil in ecological farming systems leads to better retention and conservation of water in the soil, which has the effect of reducing irrigation needs. - High nutritional quality of organic products. Organic products are characterized by a higher content in dry substance, namely amino acids, vitamins, mineral salts, oils. - Minimizing the contribution of agriculture to global environmental problems. Ecological agriculture minimizes global environmental problems such as acid rain, global warming, reduction of biodiversity and desertification. Organic farming reduces the emission of gases responsible for the greenhouse effect (CO, methane and nitrogen oxides), studies showing that the emission of CO in an ecological system is 40-60% lower at the level of hectare than in a conventional agriculture system.

Because we have mentioned the numerous benefits of practicing on a large scale organic farming, we must mention the existence of disadvantages such as:

a) low level of efficiency. In the ecological agriculture, productions per unit area are lower compared with conventional agricultural systems. Low efficiency is recorded especially during conversion from conventional agriculture to ecological agriculture, and it requires a time until the level of agricultural ecosystem is ecologically restored, then the production level becomes stable.

b) Rate of recovery of organic agricultural products is higher than that of conventional products. As such, if in developed countries they are accessible to the majority population, in less developed countries, where it is still important the quantitative aspect of food, organic products are accessible to the segment of consumers with opportunities above average population.

c) The need to support organic farming. Even in developed countries where ecological agriculture has a higher importance; it has been and is still supported by various economic levers (allowances, tax exemptions, etc.). Currently, these forms of support for organic farming are discarded for various reasons, it is noticed the return of farmers to conventional agriculture.

d) Organoleptic characteristics (appearance, taste) sometimes deficient in certain agricultural products. There is the possibility that some organic products as a result of non-use of chemicals to combat pests and diseases, growth regulators and other chemicals, to have a deficient commercial aspect (smaller fruit with spots on them, etc.) but this negative aspect is fully compensated by the nutritive and biological value of these products.

e) The false organic products on the market. Some traders are attracted by high profits and the price of organic products and sell conventional agricultural products as organic.

f) The control and certification process must be improved. Because organic products are marketed in this form, they must be checked and verified by laboratories. These labs should be accessible to agricultural producers, both in time and space, and in financial terms. For example, organic products obtained in Romania are sent for inspection in laboratories of other countries, given the lack of such laboratories in our country.

Organic farming as an alternative to conventional agriculture has experienced in recent years a dynamic evolution. Thus in 2007, organic farming was practiced on a total area of 170,000 ha, 10 times greater than in 2000 and 1.3% more compared to 2006. It was stipulated for 2008 an increase to 210,000 ha and the forecast was exceeded, statistics showing that at the end of 2008 there were 220 000 ha cultivated ecologically, so increasing by nearly 30% compared to 2007. It is also noted the increasing number of operators who practice this system of agriculture: from

3409 in 2006, to 3834 in 2007. For the end of 2009, it is stated that ecological agriculture will include 300,000 hectares, which would represent two percent of the agricultural area of the country. The total production in the organic farming in 2007 was approx. 200 thousand tons, registering a growth of approx. 13% compared to 2006.

The range of processed products was diversified in 2007. Unlike previous years, new products were produced: processed soy products (milk and tofu) various types of bread, pasta, processed products of rice, cereal flakes, tea from plants and berries, apple juice, processed products from snails, berries juices etc.

In 2007, they exported approx. 80 thousand tons of organic products with a value of approx. Euro 65 million which represents an increase of approx. 20% compared to 2006.

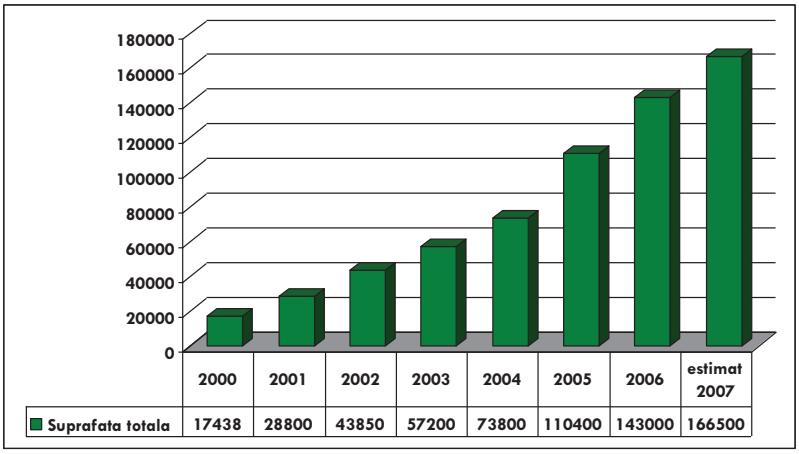
The main products exported were: oleaginous and protean products, grains, berries and mushrooms, processed milk products, honey and derivatives, sunflower oil, etc. The Romanian products have been marketed in Germany, Italy, Greece, Switzerland, Netherlands and France.

Demands on domestic and foreign markets are growing rapidly, ant to cover them the organic areas should increase 6 times. There are required raw materials and finished products such as eggs, oils of sunflower and rape, milk products (especially cheese) and honey.

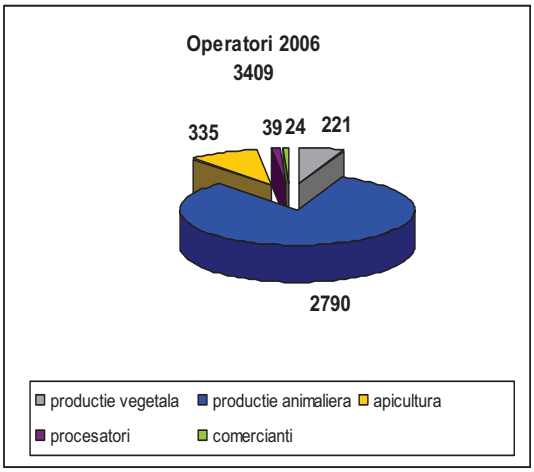
The value of imports in 2007 was approx. 3 million Euro compared to 2 million Euro in 2006.

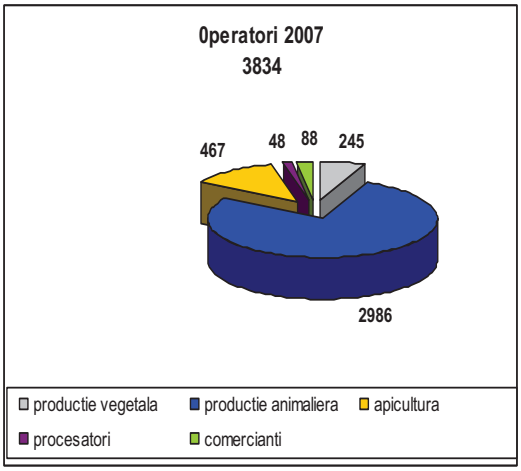
The main products imported were: brown sugar from sugar cane, coffee, chocolate, beverages made from soy, fruit juices, etc.

EVOLUTION OF AREAS IN ORGANIC FARMING



OPERATORS IN ECOLOGICAL AGRICULTURE





Romania undertakes a *quality objective*, namely the placement of organic farming in the Romanian agriculture as an engine of sustainable development, which is justified by: - an economically viable application of the growing market - a guarantee of the production process which complies with the farming environment and animal welfare - an actual capitalization of products at prices 20-60% higher than conventional products - a real opportunity to revitalize the countryside and raising the quality of life; and a *quantity objective*, to increase areas planted in organic farming as follows: as of 1 Jan. 2010 at 337,000 ha, which would represent 2.27% of the agricultural area of the country and as objective on medium term, until 2013 ecological agriculture to reach 754,000 ha, i.e. 5, 08% of total agricultural area of the country.

In conclusion, organic farming has a great contribution to a lasting economic development and plays an important role in the improvement of the environment, preservation of soil, improvement of water quality, biodiversity and protection of nature and may move ahead in the rural economy and make it viable by expanding economic activities with high added value and generate jobs in rural areas.

Practicing organic farming entails, among other things, the refusal to use genetically modified organisms. In the European Union, countries that have banned GMOs are the largest producers of organic crops. Italy, Germany, Austria and France are growing every year more and more areas with ecological plants. More and more consumers in those countries prefer an organic diet for a healthier life. Regarding areas planted organically, our country is on the 44th place in the world from a total of 122 countries according to the publication "The world of organic agriculture in 2008".

However, in Europe, organic crops cover currently less than one quarter of the agricultural area of the continent.

Romania has appropriate conditions to promote organic farming, such as: fertile and productive soil; the Romanian traditional agriculture is based on approaches that do not harm the environment and there are opportunities to identify areas where unpolluted organic farming could be developed;

The achievement of export targets is linked to other objectives (on short, medium and long periods) that can help improve the competitiveness of Romanian ecological sector in the future: increasing the number of operators in the sector that receive financial support from the Romanian Government Programs and the EU; increasing the role of non-governmental organizations (NGOs) in this sector for the development of organic products trade; association of small producers of organic farming in order to cooperate in the marketing of organic products; increasing the number of municipal and regional organizations directly involved in the National Export Strategy in the initial phase; increasing investment in export related activities in rural areas; increasing investments in activities related to organic agricultural products exported from less developed rural areas, increasing production of organic farming; increasing the number of companies involved in exporting activities of primary and processed agricultural organic products; increasing the number of approved investment projects .

In 2007, ecological goods produced in Romania amounted to 120 million Euros, half of it going to export. Exports of agricultural products and organic food in Romania represented 8% of total exports of agricultural products and foodstuffs of Romania, in value terms. As a new member of EU, Romania does not have the whole range of European subsidies that the old countries have. So Romania has to rely more on itself in order to develop agriculture. In our opinion, the fact that agriculture in less developed in Romania is an advantage, because it will be much easier to develop the organic farming. As we are less dependent on chemical inputs from abroad, the more Romanian agriculture may cope with the global crisis and climate change.

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