DESIGN OF BIO-ORGANIC FARMS

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Abstract: *Although organic farming is still an industry shortage, its importance in the agricultural sector has grown into a large number of countries with different development levels. In some developed countries, organic agriculture is an important segment of the agro-food (such as 10% in Austria and 7.8% in Switzerland), and in many other countries organic agriculture is growing more than 20% annually (the example in the USA, France, Japan, Singapore). A number of developing countries within small markets organic products (Egypt) and others have begun to explore the export opportunities offered by organic agriculture (eg exports of Mexican coffee and cotton in Uganda). In villages, where peasants from their land when they know the country, agriculture is still poorly integrated market economy. According to the Ministry of Agriculture and Rural Development (MARD), the country's agricultural area is 14.7 million hectares, representing 61.7% of Romania. Each incumbent Romanian 0.42 hectares of arable land, which is almost double the European average. Therefore, Romania is among countries with high agricultural potential. However in many regions, however, people cultivate land just to have something put on the table. In recent years, people have been talking about organic farming, a new trend in plant cultivation and animal husbandry. Organic farming does not make good home with the conventional, but differs fundamentally from the latter. The role of agriculture practiced in organic food production is clean, suitable for human metabolism and in full accord with nature. Many people complain that tomatoes and apples they buy from the market no longer have the taste of old and sometimes does not taste at all. Organic farming comes practically to solve this problem: to give the world food with authentic taste and quality. Pesticides are totally banned and genetically modified organisms are boycotted from the start. Bio-organic agriculture does not exclude, but requires the use of advanced equipment and technology, modern. To obtain bio-organic agricultural products, equipment and technologies must be more sophisticated, more developed and more adapted to the requirements of environmental protection and that of obtaining healthy products. A bio-organic farm will have a better chance to become sustainable if it will become multifunctional. In addition work will be to develop production and the processing and marketing is not. But equally important is it to develop and agro-tourism, so as to obtain additional income.*

Key words: *bio-organic farm, producers, agriculture, products, design*

INTRODUCTION

Bio-organic farm is a functional unit of the biosphere created by man, dependent on him, under his direction and management, represented by an area of land (whether owned or leased) which includes all existing bodies biota and interacting with the physical environment and economy in a way that creates a certain energy flow and trophic structure of a circuit of substances that result in obtaining a biomass and an expected benefit, derived from vegetable crops, livestock and eventually industrialization of these products.

MATERIAL AND METHODS

The authors have used the methods of work: identification and data collection, processing, analysis, observation and interpretation

RESULTS AND DISCUSSIONS

Organic products are a novelty item in the production process, especially as the market. It is therefore necessary that the difference with the development of these products, to create conditions for formation of organic products market. For manufacturers this requires:

- informing people about the quality of products through advertisements, brochures
- the identification of consumers in different geographical areas
- establishing a significant market segment, so the manufacturer to enter a quantity of products to ensure its profitability.

To design a bio-organic farms, it must respect certain requirements:

1. The introduction of crop rotations with more grain legumes and forage. Fertility requirements will ensure the cultivation of leguminous plants which leaves the land rich in nitrogen and manure.

2. Protection against diseases, pests and weeds will be provided through a combination of techniques to avoid chemical control, namely: selection of plant species and animal breeds that are naturally resistant to any kind of pests, providing a program by appropriate crop rotation; extended mechanical and manual processes to protect plants and animals, including thermal processes, combating diseases and pests by using natural products, natural enemies (parasites harmless pests that destroy parasites). And in this case, European rules require the nomination of plant protection products that can be used in pest control.

3. In livestock feed will prevent fertilized with inorganic products and purchase off-farm fodder. There will also be eliminated chemicals, veterinary prophylaxis or therapy of any kind. Animal density per 100 ha will be reduced to 50 Livestock Unit (LU greater) than conventional farms of 150 establishments.

4. The processes of transport, storage, processing and marketing of bio-organic products will ensure a permanent and strict control. They avoided the use of artificial ingredients such as: additives, minerals, flavors, colors, etc.

As a starting point for any transformation must be given special attention to the following three components:

• the most diverse crop rotation;
• full use of existing farm manure;
• hidden or intermediate sown as fodder for the years reserve conditions (dry or feed the poor) and as green manure.

The bio-organic farm organization will implement the following:

- work on the ground contours, grass strips, terracing the establishment of forest plantations
- crop rotation eliminates problems related diseases, pests, weeds, provide alternative sources of nitrogen in the soil, reduce soil erosion, avoids the risk of water pollution
- strategies for integrated control of pests and diseases with the expansion of physical techniques, particularly chemical and biological (biological control, plant infection,roots mychorrhiza)
- cultivation of newly developed varieties and hybrids, resistant to diseases and pests
- reducing the quantities of herbicides, fungicides and insecticides
- reduction of fertilizer.

In addition to organizing farm technological, structure of production is very important.

The process of improving the structure of agricultural crops in order to increase the performance quality of agricultural products requires appropriate changes and balances current and future requirements. In this context it must also balance the structure of livestock.

If farmers decide to change the production system for bio-organic farm to avoid environmental pollution, groundwater and to achieve sustainable production and income, it is

necessary that they be supported by national decision-making bodies by providing advice and where necessary, even financial support to enable them to prepare a restructuring plan to return.

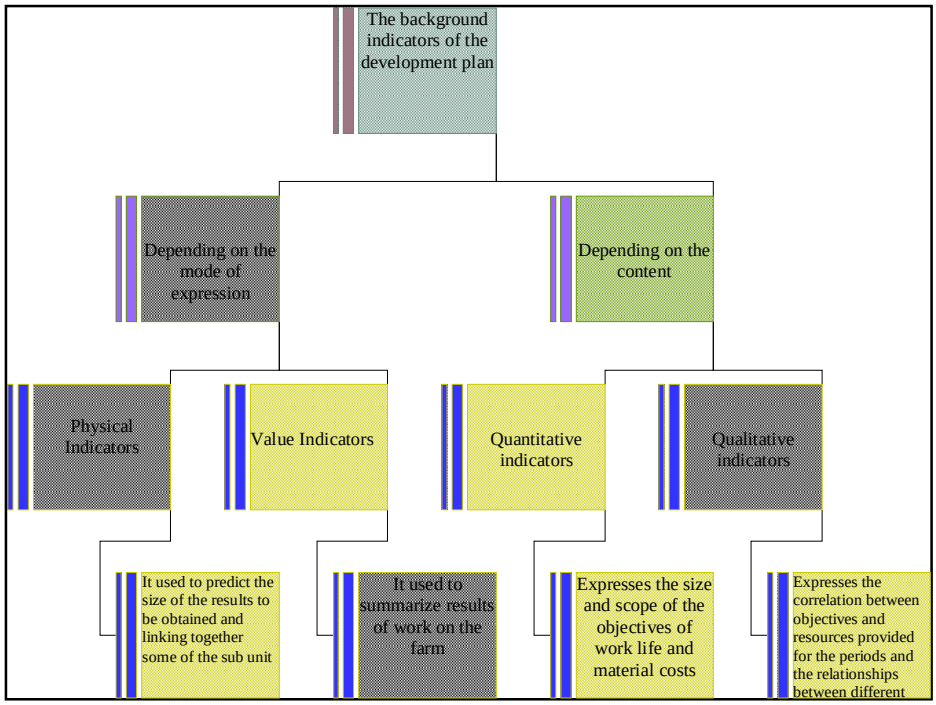

Figure 1. System indicators underlying the farm development plan

In this regard, it will consider the following:

- soil and climate
- farm size (dividing fields, traffic situation inside)
- field-meadow report
- livestock
- space for stables and buildings;
- liquid or solid waste, landfills and storage space and capacity
- crop rotation practiced so far
- available workforce.

To minimize the risks both social and economic nature, farmers will have to establish a series of measures to:

- ✓ nature preparations (storage, use, training);
- ✓ farming (fertilizer and feed requirements),
- ✓ forage crops (legumes);
- ✓ crop rotation and soil tillage;
- ✓ weeds and pests control;
- ✓ labor organization;
- ✓ sale of goods
- ✓ financing
- ✓ detailed plan over time.

If conventional farm will be restructured to form a bio-organic, you have to follow a transformation plan with a variable time period, such as:

- 2 years for field crops;
- 3 years for perennial crops and plantations;
- 2 years for grassland and fodder crops;
- 12 months to beef cattle;
- 6 months for small ruminants and pigs;
- 12 weeks for dairy animals;
- 10 weeks for birds for egg production, bought at age 3 days
- a year for bees, when the family was bought with conventional apia

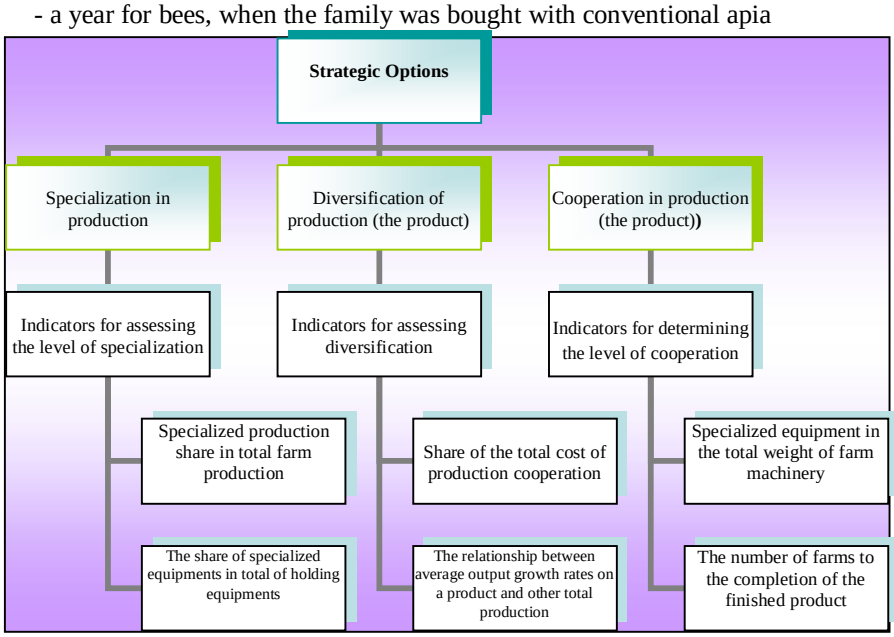

Figure 2. The main indicators for assessing strategic options

Creation of bio-organic farm requires effective the following conditions:

- ensure a competitive offer in terms of quantity and quality of agricultural products, produced with low production costs
- to achieve positive economic results and financial
- to ensure that income from agricultural activity comparable to those achieved in other fields.

Table 1

Plan for conversion of a conventional farm into an bio-organic farm

Of their household fertilizers	***Rotation***	***Second hidden cultures and culture***
Waste Compost	1. bean + grass	
	2. bean + grass	
Must spring manure	3. Winter Wheat	
Compost bin, ½ dose		Combination with green manure
	4. Summer crop (without peas)	hidden Culture of tiny white clover
Waste Compost	5. weeding, vegetable	
Must spring manure	6. wheat (and rye)	
Compost bin, ½ dose		Combination with green manure
	7. Summer crop (with peas)	
		A mixture of mustard and pea vetches of volunteers
Waste Compost	8. weeding	
Dung Must Fall	9. winter rye	
		Hidden Culture of legumes with grasses

Source: P. Papacostea - biodynamic farm, Bucharest: Encyclopedic, 2000

To practice this type of agriculture will be to achieve a farm organization based on bio-ecological sustainable development which include:

1. model of farming,
2. applied technologies,
3. economic component,
4. social component.

1. The model of farming. To talk of a bio-ecological model of farming, the farm owner will consider zoning crops depending on soil suitability and climatic conditions: temperature, precipitation, etc.. A bio-ecological model of farming is one that allows the concentration of production.

This model will not succeed on very small and dispersed areas. So, a prerequisite is that the creation of an optimal farm size.

2. Applied technologies. Applied technologies are crucial for economic growth by the progress that you print quality and other factors of production. Currently, a large agricultural area in Romania empirical practice agriculture. The only benefit to agriculture''with horse'' is that of not using fossil fuels and thus protect resources. This can be considered an economic and even environmental benefit only when it produces for own but when we talk about farms producing for the market recovery when it can not be considered an advantage, especially in economic terms taking into account low labor productivity. The vision of sustainable development, bio-organic, organic blends form a strategy for efficient energy system that will appeal to sources of clean, renewable, such as solar energy, wind energy. etc..

3. Economic component. Bio-organic farm must be aware that any actions and activities undertaken to achieve cost-effectively. Bio-organic farm will achieve the following objectives:

• promoting economic development and profitability;
• internalisation of environmental costs;
• maintaining and income stability for farmers.

4. The social component. The social component should reflect the performance of other components, results can be seen best in living standards.

The organization of bio-organic farms, sustainable rural welfare will increase, which is seen when recording a positive effect from the economic and social phenomena that dominate the Romanian village, such as:

- stop population migration from village to city by creating alternatives to motivate the existence and initiative to stimulate action to ensure the basic needs;
- combating poverty;
- equity of opportunity;
- stimulate and diversify services, the right for a better life, right to health, education, security.

A bio-organic farm will have a better chance to become sustainable if it will become multifunctional. In addition work will be to develop production and the processing and marketing is not. But equally important is it to develop and agro-tourism, so as to obtain additional income.

Transformations are not easy to achieve, „steps'' to something else than what is now being made to seem shy and little support, lacking safety. Coordinating bodies for agriculture will have to make their presence felt more by professionals working in this field. If we consider that many family farms activities take place almost at random, guidance, advice and coordination of action occurs on the contrary. Holdings may be supported in choosing inputs, organization of work, or solving problems that arise in dealing with various economic agents (suppliers, customers, service providers, etc.).

CONCLUSIONS

Organic farming is a hope for recovery of the Romanian economy, with growing influence more consumers, particularly in developed countries. Developing a domestic market for organic products is necessary, in Romania, based on knowledge of population and demand on the correlation between environmental quality and consumer demands.

It is also very important to insist on promoting accessibility and quality of education, consulting and transfer of clean technology. Market Training for this involves changing lifestyles and attitudes, efforts to educate and inform people about the benefits of organic food consumption.

The emergence of organic agriculture in Romania must come primarily through its advantages in meeting consumer Romanian and Romanian producer to be motivated and that it is a long term viable business for the Romanian society is a vital necessity.

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