Chapter 12
Sustainable Agriculture:
Between Sustainable Development and Economic Competitiveness

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ABSTRACT

Agriculture has the objective of producing food by growing plants and raising animals, but being a productive activity, depending on the technologies used, the level of intensification and specialization may result in natural resources and environmental degradation: soil, water, air. By the early 1990s, Romania practiced an intensive agriculture based on the concentration and specialization of production. Intensive chemical treatments were used to control weeds, pests, and diseases. After reconstitution ownership of agricultural land was practiced an extensive agriculture with minimal inputs. There are used small amounts of chemical fertilizers and pesticides; monoculture or short rotation is practiced. Both agricultural systems affect the environment and natural resources, endangering their long-term productive potential. In this context, a viable alternative to these agricultural systems is sustainable agriculture that combines harmoniously tillage, crop rotation, crop rotation length, use of agrochemical substances to achieve stable production, while preserving quality of resources.

INTRODUCTION

The content of sustainable development is expressed by a set of coordinates compatible with each other, which ensures satisfying present needs without compromising future generations' interests (United Nations, 1987). In this context, of sustainable development, is promoted a new strategy, of social development, which seeks the environmental impact of economic growth.

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By the nature and specific activity is performed, the agriculture participates in meeting multiple needs of the country economically and socially. First, is the guarantor of food security, economic independence of the country and has a crucial role in raising living standards.

In the agricultural sector, factors of production are exploited to ensure the consumption needs of the population. In this context, the strong specialization and intensification of agricultural activity, the uncontrolled use of certain quantities of herbicides, pesticides or inefficient use of

water can lead to significant degradation of soil and its regeneration is very slow. Also, practicing subsistence agriculture can affect ground through nutrition imbalances due to the use of small amounts of herbicides, insecticides and fungicides and amendments (Dumitru, 2000).

Currently, the environmental damage, caused by the current conventional farming practices, is many types (Burja, 2006):

- Environmental pollution, particularly of groundwater and surface water with nitrates due to the use of chemicals to fertilize the soil.
- Air pollution by increasing ammonia emissions as a result of practicing intensive farming systems and due to crops splashing.
- Problems arising from the phenomenon of marginalization: infrastructure degradation, land abandonment, chemical and physical soil erosion.
- Soil compaction and pollution resulting in a decrease of its productive capacity and decreased quality of water resources.
- Degradation landscape and wildlife habitat, etc.

Characteristics of conventional agriculture, especially the practice of monoculture, are just about all the diseases ask to find an ideal installation and multiplication. It is also ideal for maximizing the soil erosion, contamination of agricultural products and water with toxins, reducing the number of farms.

To prevent these effects, or limit their effect was identified an alternative system of production that ensure the environmental protection called sustainable agriculture that is not designed to achieve maximum productivity of the soil, but keep the nature in all its diversity as a source of food and habitat.

Sustainable agriculture has features that are in opposition to those of conventional agriculture: focus on crop rotation, keeping soil covered with crop and pasture plants, including crops and agricultural practices that maintain the productivity of farms and use knowledge of the ecological relationships between plant species to prevent the need to use artificial inputs: pesticides, insecticides. A great importance is given to the construction and preservation of natural capital within agroecosystems, especially in the soil ecosystem and natural control of pests and diseases.

In this context, the objective of this chapter is to highlight the need to reorient conventional agriculture to sustainable agriculture that combines sustainable development on the one hand and economic competitiveness on the other.

BACKGROUND

The term of sustainability, officially, was adopted and popularized by the World Commission on Environment and Development in 1987: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Thus, sustainability can be defined as the fairness between generations (Norgaard, 1991) and also through efficient use of resources, as a distribution of rights or transfer of assets for future generations (Ruttan, 1990).

Although sustainable development is a global challenge, the answers must be given at national and local level. Sustainable development involves maximizing the net benefits of economic activity, subject to maintain the flow of services and quality of resources used (Turner, 1988). In a practical sense, sustainability is finding a balance between inputs, outputs and profitability (Ikerd, 1990).

Sustainable development has three main dimensions: economic, social and ecological