

The Ecological Foundation of Sustainable Land Use in Hungary

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The United Nations held a Conference on Environment and Development in Rio de Janeiro in 1992. This Conference adopted various documents, among others the document AGENDA-21, which is a collection of recommendations concerning various fields. This document consists of forty chapters, including one on "Promoting Sustainable Agriculture and Rural Development" containing recommendations on several programme areas. I quote some of them:

- Agricultural policy review, planning and integrated programming in the light of the multifunctional aspects of agriculture, with particular regard to food security and sustainable development.
- Land-resources planning, information and education for agriculture.
- Land conservation and rehabilitation.
- Water for sustainable food production and sustainable rural development.
- Conservation and sustainable utilization of animal genetic resources for sustainable development.
- Integrated pest management and control in agriculture.
- Sustainable plant nutrition to increase food production.
- Rural energy transition to enhance productivity.

These recommendations will certainly make their effects felt in the agricultural policies of several countries. In Hungary too, problems related to the elaboration of a model of sustainable agriculture are now the subject of wide-ranging debates. Scientific research in Hungary has also begun to do preparatory work for managing those problems of agriculture which are expected to emerge by the early years of the next century.

The following new factors influence the situation of Hungarian agriculture:

- The world has changed; its former bipolar structure has been re-arranged, and this has given rise to profound changes in most of the former socialist countries in Europe. The Council of Mutual Economic Aid has ceased to exist, and the closer integration of these countries to the Western European communities is on the way.

- Recently, transformation processes have started in Hungary in a number of important fields, such as ownership and market relations, the strengthening of private property, the emergence of various local or local governmental properties as new forms of ownership, the privatization of state properties, the transformation of agricultural co-operatives, and a completely new system of state administration has also begun to take shape.

- In agriculture, new forms of land ownership have been instituted. The land has been re-distributed to individuals, who can organize agricultural co-operatives of various types on a really voluntary basis or manage their own individual farms.

- Consumption and nutrition have also changed in the meantime, despite the hopefully only temporary decrease in domestic consumption and the disadvantageous changes in its structure, the emerging new trend of lacto-vegetarian nutrition, along with the growing interest in bio-products and other new nutrition-related endeavours, will certainly pose some further problems to be tackled.

- The over-supply of agricultural products and foodstuff which has recently appeared in part of Europe, as well as the current trends on the world market, will certainly raise the problem of the non-food utilization of cultivable lands, which is sometimes also called "alternative agriculture".

- Effects, favourable or unfavourable, produced by the expected and highly probable climatic change, render it imperative to make the necessary preparations and to work out well in advance alternative actions and solutions.

- Environmental protection and nature conservation are closely intertwined with the present and even more so with the future of the entire society, including, of course, agriculture - a fact which focuses attention on the skills, expenditures and preventive character of an environmentally sound agriculture.

These are the new factors influencing the future state of Hungarian agriculture.

Now let me say a few words on the concept of sustainable development.

According to the definition of the Brundtland Report (Our Common Future) "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

According to the definition formulated by IUCN, UNEP and WWF, sustainable development is: "improving the quality of human life while living within the carrying capacity of supporting ecosystems".

Sustainable nutrition security was defined by the famous agricultural scientist, Swaminathan, as "providing physical and economic access to balanced diets and safe drinking water to all people at all times".

The US National Research Council identified the principal goals of sustainable agriculture in 1989. These are:

- Incorporating nature processes such as nutrient cycles, nitrogen fixation and pest-predator relationship into the agricultural production process;
- Reducing the use of off-farm inputs, which have a harmful effect on the environment or on the health of farmers and consumers.
- Making greater use of the biological and genetic potential of plant and animal species.
- Improving the match between cropping patterns and the productive potential and physical limitations of agricultural lands to ensure the long-term sustainability of current production levels.
- Emphasizing improved farm management and the conservation of soil, water, energy and biological resources.

These recommendations could be applied to Hungarian agriculture as well. However, due to the unique historical background, these should be complemented with some more points to be able to achieve sustainability. These are:

- Counterbalancing and termination of the deficiencies and damage resulting from the one-sided large-scale agricultural system and quantitative development that characterized earlier decades.
- Influencing the new ownership relations and farm systems in the interest of sustainable development.
- Preventing the adverse development which usually appear in the early stages of an evolving market economy (causing damage to free natural resources, deforestation, exhaustion of the soil, etc.).
- Spreading the new trends, methods and results of scientific research.

The land resources in Hungary are relatively favourable. The indicators relating to land resources are good, both in respect of arable land per capita (0.47 hectare) and in that of its utilization. As a result of research carried out for several decades, precise scientific knowledge is available on the properties of the soils in the country. It is advantageous for Hungary that the ratio of utilizable agricultural area compared to the territory of the country is relatively high: 69.4%. When summing the arable land with forests, reedy areas and fishponds, i.e. all regions where utilizable biological products arise, this ratio reaches 88.4%.

In respect of the utilization of land resources, we have to differentiate between the owner and the user of the land. Before World War II, most of the land in Hungary was privately owned, while a smaller part of it was in the possession of communities and in state ownership. Hungarian agriculture was constituted by the predominant large estates, by smaller peasant farms and by agricultural workers who did not own any land. Following the post-war democratic land reform - when the large estates were distributed among the peasants - a great number of so-called dwarf holdings were formed. Parts of the large estates were transformed into state farms. In the early 1950's a process started in the course of which private farms were forced, by pressure from

"higher quarters", into co-operatives, as a result of which, the majority of the land came to be owned by co-operatives.

Following the democratic elections and political changes in spring 1990, the Parliament declared and legally regulated the principle of the restoration of private ownership. In the case of land, this involves earlier land owners putting in a claim for compensation, and in this way they may become land owners again. So the lands owned by the state and co-operatives will come to be privately owned, except those which remain government property.

Co-operative farms will also be transformed or dissolved according to the decision of their members, among whom the property of the co-operative will be distributed. They can decide then whether they leave the co-operative and continue their activities as independent private farmers, or - now as real owners - form a new type of co-operative to continue farming within that organization.

23 out of the 134 former state farms will remain the property of the government (with 25-92% of the stocks), while the remainder will be privatized.

Over the last forty years several disadvantageous effects have exerted an impact on the soil resources of Hungary. They are:

- soil erosion caused by water and wind;
- physical degradation of the soil, and its compaction;
- acidification of the soil;
- secondary alkalization.

Water erosion is the most widespread; it can be found on 40% of the country's arable land.

The earlier economic policy, which urged ever greater quantitative growth and large-scale farming, has led to the formation of over-large fields, having abolished former roads and rows of trees and having mixed soils of different qualities in one field; the configurations of the terrain have often also been disregarded.

Big, heavy tractors and machines have been used for intensive soil cultivation, causing soil compaction. More rational farm and field sizes will make it possible to reduce these types of damage and to promote sustainable land use.

Soil amelioration has unfortunately diminished in Hungarian agriculture. On the whole, amelioration is only carried out on 1% of the arable land. This is due to the radical decrease in financial support from the state and to the lack of capital on the part of the farms. Without large-scale amelioration programmes, the sustainable development of agriculture is not possible.

Following the changes in land ownership relations, trading in land will start; consequently, land will again have a price, a value. This will provide an opportunity to appreciate and protect natural resources more effectively. However, this does not come automatically, since there are warning examples of soil degradation even in countries with a traditional parliamentary democracy and market-oriented economy. The organization of consulting services helping the farmers' work and the realization of government intervention and financial sup-

port in the interests of promoting the protection of natural resources will be of special importance in the case of Hungary. Land, however, is not only the property of the individual, it is at the same time a national value; so the state should also take part in its protection.

As mentioned above, at present the privatization of the land is the most dominant factor in Hungarian agriculture. As a result of individual land use, the following positive environmental tendencies can be expected:

- There will be a reduction in the size of the farms, especially in the case of oversized ones, which means that ecological aspects can be given better consideration.

- Owners will be greatly interested in preserving their natural resources, while the preservation of their income will depend on these.

- The general tendency might lead to a reduction in the use of materials and chemicals, thus decreasing the danger of environmental pollution.

- On smaller farms - especially on private family farms - the opportunities to utilize the by-products and waste of biological production will increase. This is also advantageous for the environment.

- The smaller, lighter machines which are expected to be used will cause less damage to the soil.

However, the small farm land use system also has its potential dangers for the environment:

- It might happen in some places that the earlier small fields will again prevail, as they did several decades ago, which precludes the possibility of contour tillage, i.e. protection against erosion.

- due to the lack of control and expertise, chemical residues might increase, primarily in fruit and vegetable products.

- Household animal keeping is expected to increase and this might become a dangerous source of pollution if the by-products are not treated carefully due to lack of capital.

All these dangers can be greatly reduced if well operating, state supported extension services are established to help the activity of the new farmers and the new co-operatives.

These are the new challenges facing Hungarian agriculture on the road to sustainability. It is very much hoped to overcome the present difficulties and to set up a system of agriculture in the country which will save the environment and will at the same time promote economic development.