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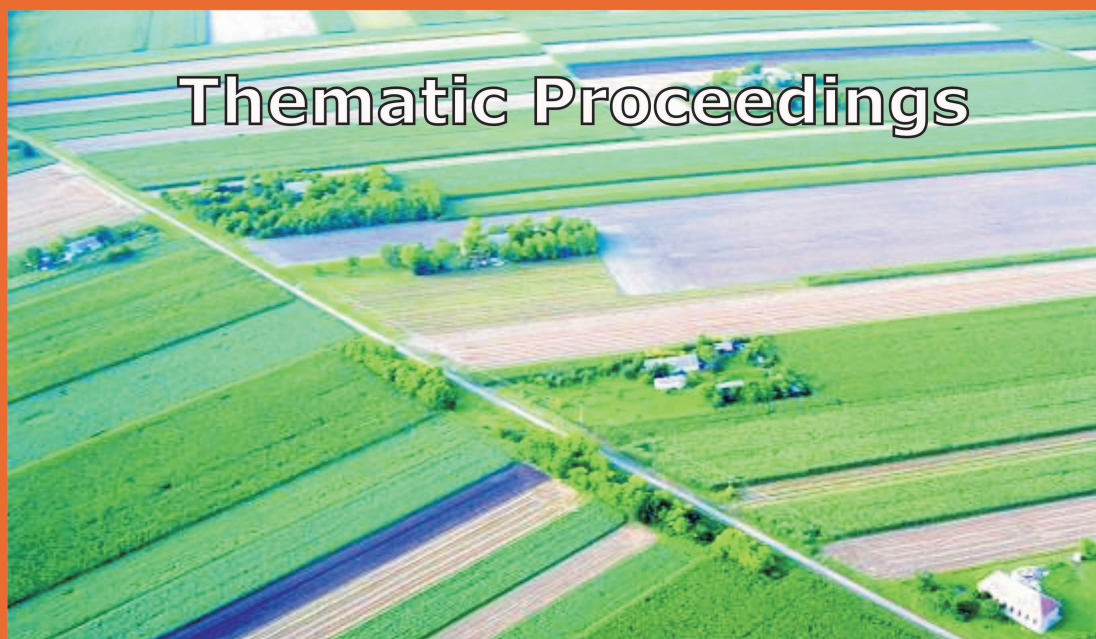
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Miladin M. Ševarlić



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NECESSARY PREMISES FOR THE ELABORATION OF A MODEL FOR THE MANAGEMENT OF SUSTAINABLE AGRICULTURAL EXPLOITATIONS

Ioan Lazăr, Maria Mortan, Vincențiu Vereș, Diana Zagan-Zelter¹

INTRODUCTION

The conferences of the United Nations for Sustainable Development (Rio de Janeiro, 1992), for Social Development (Copenhagen, 1994), for Women (Beijing, 1995) and for Human Settlements (Istanbul, 1996) offered to the participating countries a favourable environment for creating sustainable development strategies both at national and local level.

The sustainable development concept must take into account the impact of human activity on the natural resources and their conservation. From the point of view of using the earthly surface, at international level agriculture occupies approximately 40% and in Romania circa 62% (INS source), thus emphasizing the role of agricultural activities in the sustainable development of the territory. Sustainable development can be defined as the development which satisfies the needs of today's generations without reducing the chances of future generations to satisfy their own needs. This is the reason for which the public authority manifests a continuous interest for the concept of sustainable agriculture, which can be seen in the financing of numerous studies on this theme (European Commission, 2001; Esty and others, 2005; McRae, Smith and Gregorich, 2000; Piorr, 2003).

A sustainable agriculture must be economically viable, ecologically "healthy" and fair from the social point of view (Vilain, 2003). The sustainable agricultural exploitations must answer to these three objectives as well as possible considering their territorial context and their own agrarian system.

The main problem encountered is the way of measuring the sustainability of agriculture and of the agricultural exploitations. The variables which could represent synthetically the three sustainability objectives mentioned before are very difficult to define. We can see in the specialized literature a lot of lacks in defining the instruments for evaluating and monitoring in dynamics the different components of sustainability (Belcher, Boehm and Fulton, 2004; von Wiren-Lehr,

¹ Ioan Lazăr, Maria Mortan, Vincențiu Vereș, Diana Zagan-Zelter, Faculty of Economics and Business Administration, Cluj-Napoca, Romania

2001). These can be added the various definitions of sustainability when the production systems are considered at local, regional and national scale.

In order to solve these problems recent researches have focused on developing some indicators for estimating the different components of agricultural sustainability. The studies through these indicators cannot be generalized but they enable the knowledge and evaluation of the phenomenon and also facilitate useful expertise for agricultures and society.

This article intends to present the main premises for the elaboration of a management model for a sustainable agricultural exploitation from Romania. The model takes into account the well-known methods for the elaboration of indicators concerning the sustainability of agricultural exploitations. We are referring to IDEA method (Indicators of Agricultural Exploitation Sustainability) elaborated in 2000 and revised in 2003, the IDERICA method (the adaptation of the previous method to the specificity of statistical evidence from France).

At present Romania has joined the European statistical methodology, but as in the case of any state there are specific national aspects (numerous agricultural population) The experience of other countries has shown that the strategies of the Local Agenda 21 represent important mechanisms for achieving a sustainable development, both in the elaboration process and through concrete results.

Sustainability, as a theoretical concept, raises a series of problems because of multiple approaches – the holistic approach of own agricultural and ecological system, the approach from the perspective of management sciences, from the thermodynamics science perspective and from the geographical perspective – which determines the difficulty of defining the sustainability indicators and their implementation into practice. (Jean-Joseph Cadilhon, Patricia Bossard, Philippe Viaux, Philippe Girardin, Christian Mouchet et Lionel Vilain, 2006).

The identification of the indicators concerning the sustainability of the environment and the social one poses the biggest problems because at economic level the identification and quantification of sustainability indicators is facilitated by the agricultural accounting evidences. Also, recent studies concerning the evaluation of agricultural sustainability show the difficulty of using simultaneously indicators from at least two fields. (Girardin, Bockstaller and van der Werf, 2000; Pacini and others, 2003; Stoorvogel and others, 2004).

Using several measurement scales for the sustainability of a system poses problems concerning the share of different scales and the concessions made when choosing an indicator

As it results from recent specialized literature referring to the indicators of agricultural exploitations sustainability, we remark the problem of the difficulty in

creating measurements which can reduce the differences among the three fields where sustainability manifests itself, everything in order to obtain a simple evaluation instrument and for the results to be easily spared among the interested ones. IDEA and IDERICA methods answer to these limits through the system of elaborated indicators.

The agricultural exploitation represents the economic basis for the village survival, for rural in general, because of reduced dimensions the investment capacity is low, keeps up with progress with great difficulty and thus the incomes obtained are reduced.

The more reduced share of agriculture, especially regarding employment and as an income source for the rural population, makes the policy of the agricultural production more and more insufficient, taken as singular, as a strategy for improving the situation of the rural areas. This is why finding alternatives for using the resources of the agricultural exploitations may be an actions way.

In Romania the policy for agricultural exploitations structures must aim, on one hand, at creating employment possibilities in non-agricultural spheres, and on the other hand it should be oriented in the direction of sustaining and increasing the viability of the exploitations.

Intensive agriculture has solved only partially the problem of food security and ensured the welfare of agricultural producers only correlated with quite expensive agrarian policy measures. The particularities of the production process in agriculture as well as the long time needed for recovering the components of the natural capital generate long time intervals between cause and effect.

Because of these shortcomings were developed alternative agricultural systems whose success depends on the global managerial approach of the rural space. In this context sustainable development is defined according to local, regional and national particularities which will influence the order of priorities in adopting the reconstruction and conservation objectives. The human dimension becomes more and more important, being constituted on one hand from producers who have to take into account both a new criterion, the ecological one, and the new professional orientations, and under these circumstances to ensure economic efficiency and on the other hand from consumers, who prefer the quality of ecological products and the services offered by agricultural exploitations, but few are willing or have the means to cover the supplementary costs generated by the requirements for the protection of the environment.

The future the emphasis in agriculture and in the rural space will be on the identified priorities such as: the improvement of manufacturing and marketing structures for agricultural and fish products, the food quality control, as well as the veterinary and fito-sanitary control, the improvement of infrastructure for rural

development and agriculture; the development of rural economy and human resources; the protection and conservation of the natural environment.

THE METHODOLOGY FOR ESTABLISHING THE CALCULATION INDICATORS FOR THE SUSTAINABILITY OF AGRICULTURAL EXPLOITATIONS

After analyzing bibliographical sources (The National Strategic Plan, 2006; The Complex Development of Rural Space, 2006; The General Agricultural Census, 2002; Ghereș, 2002; Ghereș and others, 2002; Samochiș and Vereș, 2004) and the results of our previous research (Vereș, 2003; Mortan, 2005; Lazăr and Mortan, 2003; Mortan and Lazăr, 2000) we can assert that for setting up a sustainable agricultural exploitation we must take into account at least the following:

- the land and the climate;
- the size of the farm;
- the report cultivated land-grassland;
- the space for stables and buildings;
- the liquid or solid garbage, the space occupied by holes in m³;
- the rotation of crops and their alternation;
- the soil works;
- controlling the weeds and pests;
- the available workforce;
- the organization of work;
- the sale of products and services;
- the financing of individual agricultural exploitations.

The measurement of agricultural exploitation sustainability can be achieved through a set of indicators which refer to the three fields – economic, social and ecological. For each field we can detail special indicators, with different shares in the construction of the general aggregated indicator for measuring the sustainability of the agricultural exploitation. Synthetically they can be presented in the following way:

Indicators for measuring the sustainability of the agricultural exploitation

Field	Subfield	Indicators
The sustainable development of the production environment (ecological)	The diversity of activities	The diversity of annual crops The diversity of perennial crops The diversity of other associated vegetal crops The diversity of the animal livestock The evaluation and improvement of the genetic patrimony The development of non-agricultural activities
	The territory organization	The type of rotation The size of field in rotation The conservation of the natural environment The administration of the fodder surfaces
	The production technology	The quantity of chemical fertilizers The level of pesticides and veterinary products The soil protection The administration of water resources The energetic autonomy degree
The sustainable development of the social environment	The quality of the products and rural space	The quality of the produced foods The treatment of agricultural wastes The valorisation of buildings and landscapes The quality of roads
	The development of rural services	Complex services Direct valorisation The association of producers
	Human development	Training Employment rate Life quality Work hygiene and security
Sustainable economic development	Economic viability	The income level
	Economic independence	Financial autonomy The influence of direct helps
	Efficiency	Profit rate

Source: Adapted after Girardin and others, 2004; Schneider, 2004; Vilain, 2003.

The shares of the specific indicators have relevance only in a concrete situation, because of the zonal diversity from Romania, in general and from the NW region in particular. Because of this we established shares only for the three fields to

which refer the indicator for measuring the sustainability of the agricultural exploitation in the following way:

- For the sustainable development of the production environment (ecological) 40%. This share is justified by the role played by the ecological part in sustainable development. Seeing the real importance of this field can diminish the negative effects generated by economic and social development;
- For the sustainable development of the social environment 30%;
- For the economic sustainable development 30%.
- The equal shares granted to the other two pillars (economic and social) are justified by the reduced incomes of the exploitations and by the unemployment in the rural area.

The system of indicators that we propose is an open one, and we can identify other specific indicators and even new subfields according to concrete situations.

According to the indicators identified as necessary for the evaluation of the sustainability of an agricultural exploitation we consider that this should fulfil the following premises:

- to use complex and performant managerial techniques meant to ensure the ecological integrity towards the natural environment and even the
- to be specific for the area according to the soil and the climate and to ensure a certain relation between the products demand and supply, that is to be flexible;
- the dimension of the agricultural exploitations should correspond to its specialization and the technologies applied in order to be efficient;
- to preserve biodiversity, the beauty of the landscape and other goods which are not evaluated on the existing markets;
- to be profitable for producers on long-term
- to be economically efficient, from a social perspective, that is: to ensure food safety and at the same time corresponding incomes for agricultural producers.

In order to convince the exploitation managers to practice a sustainable agriculture they need financial support but at the same time they are interested in the revenue obtained and their status in society; if these are improved there will be no more need for constraints. If farmers practice sustainable agriculture, the problem of natural environment and food safety will become a major component of social debate

Fulfilling these premises can be achieved in our opinion through the following activities:

- the increase of the agricultural exploitation dimensions through buying land, renting agricultural fields, especially by non-agricultural fields owners or old ones; the association of small producers, by maintaining the property on the land and other production factors

- using chemical fertilizers and pharmaceuticals in rational quantities;
- granting financial facilities for the farmers to have the possibility of acquiring agricultural equipments, performant sorts and hybrids, chemical fertilizers etc.
- providing consultancy to farmers through information and training centres, The Agency for Payments and Intervention for Agriculture so that they should be updated with the new technologies and not lastly with the present state of agriculture for ecological, economic and social point of view.

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