

## **THE SUSTAINABILITY CONCEPT BY ECOLOGICAL ECONOMICS AND THE CONTRIBUTION OF SOIL SCIENCE**

SÉRGIO GOMES TÔSTO<sup>1</sup>; LAURO PEREIRA CHARLET<sup>1</sup>; ADEMAR RIBEIRO ROMEIRO<sup>2</sup>; JOÃO ALFREDO MANGABEIRA<sup>1</sup>

1. EMBRAPA; 2. UNICAMP.

Abstract:

The several scientific papers, the governmental policies supported by such concepts, the sustainable management broadcasted by economics agents, the litigations, i.e. a series of manifestations are examples of the growing space occupied by the search for a more sustainable situation in the use of natural resources. It can be said that a creative social dynamics is emerging and it results in the uprising of interesting efforts of global, regional and local character, which directly or indirectly benefit from the adoption of a more integrated vision of the processes in the search for sustainability. This vision must synthesize the groundwork that justifies the theoretical tools, and, in the case of Ecological Economics - EE, the first component of this pre-analytic vision is the definition of EE as a system science, that is, a science that deals with the understanding of complete systems, and not only their parts, the latter being a common practice in traditional science. A system is understood as a group of interdependent parts linked by energy, matter and information exchanges. Recognizing the essential relationship between systems as an object of ecological economics implies reviewing and adopting a series of principles, groundwork and parameters of the economical theory. Such parameters by means of scale, allocation and distribution concepts. The integration of several approaches proposed by different knowledge areas point to a new form of considering the problems associated to sustainability. This approach in which the objectives of ecological sustainability, the distributive justice and the economical efficiency are simultaneously considered are objectives postulated by EE. The production economical activity allocates resources with the intention of satisfying human needs. For EE, an efficient allocation of resources is also desirable. However, this allocation must obey the limits established by the interaction between human systems and natural systems, i.e. the limits defined by the sustainable scale for the use of the resource. Thus, an allocation that is efficient in a broader sense than that defined by traditional economics is sought. The discussion is not about the efficiency obtained when greater benefits are achieved with the lowest possible costs. The allocation of values with the purpose of computing costs and benefits must be performed so as to contemplate not only all the elements within the systems, but also to take into account, as a limit, the factors related to the scale of use of natural resources. However, even though the market can be an appropriate vehicle for the obtention of efficiency in the allocation of resources, it must necessarily be conditioned by the sustainable scale, and it will have to take into account all the environmental resources valuation processes. The market cannot be expected to play roles it cannot perform. It must be regarded that the same limits related to scale affect any institution - the state or any social institution - that allocates resources. However, an efficient allocation is not enough when the sustainable development is taken as a goal, because the benefits must be equitably distributed. In this sense, a fair distribution becomes mandatory. Thus, this parameter affects the allocation of resources within and among generations. The present use of enormous amounts of resources by few, whereas others have difficulties to satisfy their most basic needs, is a distribution problem. As unfair as the present distribution is that verified in a comparison among the present and the future generations. The use of the resources cannot deny the future generations the same levels of well-being. Another

principle constitutes the pre-analytic vision of ecological economics that refers to the scale of use of the natural resource. In broader terms, the physical volume of use of the natural resources through time would be mentioned as scale. It refers both to the energy and to the matter flow extracted from the environment in the form of raw materials and which return to the environment in the form of waste.

Therefore, the desirable use scale is the sustainable one. That is, the sustainable scale refers to a level of activity that enables the conservation of the ecosystems' capacity to regenerate raw materials and absorb waste along time. In ecological terms, it means maintaining the ecosystems' support or charge capacity. For the practical and empirical purposes, the concept of soil use capacity (Lepsch, 1987) was imported from soil science to interpret the concept of sustainable scale for the lands in the agricultural environment, preconized by EE.

#### REFERENCES

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