

ESSENCE, CRITERIA AND PRINCIPLES OF SUSTAINABLE LAND USE

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Abstract. *Natural resource management is an indispensable part of the economy, while land use as an objective continuous multi-purpose process of land use by society acts as its most important component subsystem. Land resources are used in all spheres of society's activity-economic, social and environmental. Under the global model of economic growth, the load on natural resources has reached its maximum size. In some regions of the world and landscape ecosystems around the world, the risk of environmental disaster was growing. Objectively, there is a need to move from a model of economic growth to a model of sustainable development, including sustainable environmental management. Land use is the most important component of the environmental management system. In order to translate the inefficient system of land use in Uzbekistan to the model of its sustainable development, the main criteria and principles were studied and established, and the definition of sustainable land use was given.*

Keywords: *Economy, ecology, development, sustainability, criteria, principles, environmental management, resources, degradation, land use, efficiency.*

The purpose of the study is to develop a methodology for the transition from the existing inefficient land use system to a model of sustainable use of land resources. The object of the study is the land use system of Uzbekistan.

Method of research. The method of system approach and analysis of complex systems is used to study the problem, since land use is a complex material-abstract system in structural and organizational-functional terms. Since the mid-twentieth century, scientific and technological progress has become the main strategic factor of economic growth, which has provided an increase in the quality of equipment used, the qualification of the workforce, the level of organization and management of production. At the same time, it was based on a continuous increase in the volume of natural resources involved in economic turnover to the detriment of nature. The result of high growth rates of production and consumption of natural resources was the depletion of soil, land degradation and mainly its extensive reproduction. Investments in the industry for the development of new lands significantly limited the cost of restoring their productivity, which led to significant degradation in many regions of the world at the beginning of the XXI century. The degradation of land and landscape ecosystems has become a significant limiting factor for economic growth, requiring continuously increasing expenditures to combat its consequences, the environmental situation has deteriorated, and not only the environment and economy, but also the social balance, have been threatened. In the end, the "economic growth" model proved to be untenable from the point of view of further economic growth, as well as from the point of view of preserving the ecological state of the land and the natural environment. A new development Strategy was required, and the international community adopted a Concept (Rio de Janeiro, 1992) focused on sustainable

development, ensuring the simultaneous preservation of the biosphere and maintaining the sustainable development of all countries [UN Convention, 1992].

Land use is an essential part of environmental management. Society is forced to use land resources for its preservation and development. In the broad concept of "land Use – a socio-economic phenomenon that develops in accordance with the current laws of nature and society", in a narrower – "objective continuous multi-purpose managed process of land use by society" [Chertovitsky, 2007]. Geographically, Uzbekistan is located in the arid natural and climatic zone with insufficient provision of precipitation, water resources, significant negative impact of global climate change and environmental disaster in the Aral Sea basin. Irrigated lands of the Republic are largely depleted and saline, rainfed lands are subject to water and wind erosion, and pasture vegetation is degraded by 20-30%, which has led to significant environmental damage in land use and agriculture. The pace of combating land degradation is not high enough, while the population of the Republic is growing by 1.5% annually. The complex of shortcomings in the use of land resources indicates the need to move to a model of sustainable land use. Taking into account the current difficult environmental situation, the Republic of Uzbekistan, as a developing country, joined the Convention on sustainable development (1996), signed the UN General Assembly resolution "Transforming our world: The agenda for sustainable development for the period up to 2030" [UN General Assembly Resolution, 2015]. The Cabinet of Ministers of Uzbekistan has approved National goals and objectives for sustainable development for the period up to 2030 [Resolution UZB, 2018], developed the State Committee of the Republic of Uzbekistan on land resources, geodesy, cartography and state cadastre goals and objectives for the transition to a sustainable development model of land use in the country [Chertovitsky A., 2007].

The following criteria are accepted as objective conditions for the transition to sustainable land use:

1) maintaining a compromise between nature and society in order to achieve social balance and ecological and economic development. Society's consumption of natural resources should not exceed the rate of their renewal. The implementation of this criterion in land use is ensured by priority consideration of the influence of the environmental factor in the process of land use;

2) development of a society that meets the needs of both today's and future generations on the basis of sustainable development. This criterion for land use provides for long-term maintenance of the quality and quantity of land used, which will provide a reasonable and guaranteed volume of production of material goods and other services for modern society and for future generations;

3) the need for sustainable and effective development for developing countries in order to close the gap in economic development between developed and developing countries by providing the latter with modern production technologies and voluntarily reducing consumption by developed countries. For developing countries, a feature of their development should be an organic combination of efficiency and sustainability of production [Papenov, 1997]. The rate of consumption of renewable and hard-to-renew natural resources, especially land resources, must be lower than the rate of their sustainable renewal, and environmental problems cannot be solved without a comprehensive solution to socio-economic problems.

In order to develop a model of sustainable land use, the following basic principles of its development are established.

1). A systematic approach to land use as a complex material-abstract managed system, an objective continuous multi-purpose process of using land resources in society. A systematic approach helps to plan the development of rural areas on the basis of drawing up a General scheme for the development of land use in the country in the future, with further

details for the development of schemes (projects) of regions and administrative regions. At the same time, the "General – to-private" design condition must be met. The development of schemes should take into account the natural and climatic conditions of rural areas and the effect of economic laws in the field of land use.

2). Ecologization of land use as a principle provides for the transition to a new environmental policy and priority consideration of the impact of the environmental factor in land use. Not only individual natural objects, but landscape ecosystems as a whole are subject to protection. The mechanism for implementing the principle is to take into account the influence of the environmental factor at all phases of the full reproduction cycle of land use.

3). Ensuring a closed reproduction cycle based on the balance of nutrients and ensuring the optimal water regime in the soil, taking into account the laws of natural science. This condition is achieved by the introduction of resource-saving technologies, the annual implementation of the necessary complex of land reclamation to restore land productivity. The constant isolation of the reproduction cycle is a guarantee of preventing land degradation, as well as the full use of the productive forces of the soil.

4) Functioning of the land market. Market regulation of the balance between the consumption of land resources and material goods is supplemented by state regulation of land relations in conditions of sustainable land use. It helps to strengthen the organizational and economic foundations of land use, lease land relations, redistribute cash flows between economic sectors and increase their revenues to agriculture, improve the efficiency of economic forms based on their self-financing and self-government, and develop a "green economy" in agriculture.

5). Modernization of the land use system based on innovative solutions and resource-saving technologies with the necessary investments, including the reform of the organizational and functional structure of the system, aspects and functions of land use management.

6). Integrated management of the land use system is a complex impact on planning, technological use and reproduction of land productivity by: introducing innovative solutions in soil science, agriculture, irrigation and land reclamation, conservation and restoration of landscape ecosystems; improving organizational, economic and legal mechanisms for land use; introducing modern resource-saving technologies and modern technologies in information and technical support of the land use system.

As a result of the research, the following definition of sustainable land use is given: "Sustainable land use is the use of land that provides acceptable material benefits and other services (including environmental ones) for both the current generation and future generations on the basis of modernization and innovative development of its system, rational and effective use of limited land resources by achieving a closed reproduction cycle and integrated management of the system". A fundamental condition for sustainable land use is the transition to a new environmental policy that includes priority for taking into account the impact of the environmental factor, balancing the environmental and economic aspects of land use, and harmonizing the interests of society and nature. The criteria and principles of the sustainable land use model are substantiated.

Conclusions. The transition from an existing inefficient land use system to a sustainable land use model is an objective necessity and must be carried out in accordance with its reasonable criteria and established principles. Given the complexity of the Republic's land use structure based on the multi-purpose use of land in society, the transition to a sustainable land use model should be carried out for each specific type and subspecies of land use, taking into account their features in land use.

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