



A SUSTAINABLE DEVELOPMENT MODEL OF FARM HOLDINGS BASED ON LAND RESOURCE USE FORECAST

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ABSTRACT

This article analyzes the problems of developing a model of sustainable development of dehkan farms based on the forecast of land resource use. Taking into account scientifically based forecast indicators, agro-economic and environmental factors, mechanisms for ensuring the sustainability of economic entities are proposed. Statistical analysis, regional assessment and practical recommendations were used as the basis for developing the model.

Introduction. Dehkan farms play an important socio-economic role in the agricultural sector of Uzbekistan. In particular, their activities are crucial for the rational use of land resources, ensuring employment of the rural population, strengthening food security, and ensuring the stability of the local economy. However, in the context of limited land resources, their degradation, water scarcity, and climate change, the issue of ensuring the sustainable development of dehkan farms is becoming increasingly urgent.

Therefore, it is necessary to formulate a long-term development strategy for dehkan farms by developing a scientifically based forecast of land resource use. Such an approach will allow saving resources, maintaining land fertility, ensuring the sustainability of crop production, and increasing environmental safety.

Literature analysis. Land has been the most important and indispensable resource at all stages of human development. Land resources are not only the main source of agricultural production, but also the foundation of economic independence, food security, environmental sustainability and social well-being. In particular, land is of decisive importance in the activities of peasant farms, and their survival, development and economic efficiency are closely related to their relationship with land. In the conditions of agrarian countries such as Uzbekistan, proper and rational management of land resources, their use based on a scientifically based forecast, is a decisive factor in the sustainable development of peasant farms. After all, land plays a unique multifunctional role not only as a natural resource, but also as a means of production, economic value and social base. Therefore, determining promising directions of land use and managing it based on a scientifically based forecast is an important strategic issue. In recent years, the country has made significant changes in agricultural reform, regulation of land relations, and support for farmers and peasant farms. However, to ensure the long-term effectiveness of these reforms, a sustainable approach to land resources, an improved system of their analysis, management, and forecasting are necessary. It is these factors that serve as the main criteria for determining the development model of peasant farms.

Modern economic conditions, global threats such as climate change, water scarcity, land degradation and ecosystem degradation sharply increase the need for effective forecasting and management of peasant farms. Because these factors directly affect not only the economic

results of peasant farms, but also the standard of living of the population, food reserves and ecological balance. Therefore, creating a sustainable development model based on forecasting the use of land resources is an urgent issue not only from a scientific but also from a practical point of view. Peasant farms differ from other types of farms in that they operate on small areas, have limited resources, and are strongly dependent on climatic and soil conditions. This requires a special approach to their management, forecasting and development. In order to ensure sustainability, it is necessary to conduct a thorough analysis of the state of land resources used in these farms, develop strategies to maintain soil fertility, and introduce a system of integrated management of land and water resources. The forecast of land resources use is understood as a prediction of the future state of existing land reserves, their quality, composition, methods of use and the dynamics of their change. Through this forecast, dehkan farms will be able to determine their production strategy, reduce risks, increase productivity and save resources. At the same time, a land-based forecast is also of great importance for state policy. It serves as a basis for local governments in planning, attracting investment, developing infrastructure and formulating environmental policy. The situation with land resources is becoming increasingly complex, especially in Kashkadarya, Surkhandarya, Bukhara and other arid regions. Soil degradation, imbalance in water supply, salinity, and climate change negatively affect the stability of production in dehkan farms. Therefore, the need to develop development strategies based on differential forecast models in these regions is increasing.

The analysis of land resources should not be limited to statistical indicators, but also requires a comprehensive assessment of environmental, social and economic factors. Modern scientific approaches recommend the use of integrated models in creating a land resource forecast. Through these models, it is possible to develop development scenarios based on the current state of the land, its use, soil composition, water supply, climate trends and other indicators. Also, GIS technologies, remote sensing methods, soil maps and agro-ecological zoning systems create broad opportunities in this regard. In order to shed light on the topic on a scientific basis, it is important to compare local and foreign experiences. Many countries in the world, in particular India, China, Brazil, Turkey and Israel, have developed special forecast models to increase the efficiency of land resource use by peasant farms.

Conclusion and suggestions. The study found that the sustainable development model of dehkan farms based on the land resource use forecast can be an important tool not only for increasing economic efficiency in the agricultural sector, but also for maintaining environmental sustainability, ensuring a balanced relationship with resources, and formulating regional development policies. The deepening of agricultural reforms in the country, the need to increase resource efficiency, and the growing number of environmental threats make the development and implementation of this model even more urgent. At the heart of the sustainable development of dehkan farms is the principle of rational, moderate, long-term, and environmentally friendly use of resources. This requires, first of all, a normative assessment of land resources, regular monitoring of their condition, the development of forecast parameters based on existing potential, and the organization of economic activities on this basis. This approach allows for high efficiency, sustainable profitability, and resource conservation in the activities of dehkan farms. Land use forecasting, a thorough study of its physical, chemical and biological properties, will lead to real results only when carried out taking into account climate trends, water supply, productivity dynamics and the level of anthropogenic pressure. A superficial approach to land resources, limited to statistical indicators, ignores real agro-ecological problems and undermines sustainable development. The study showed that the majority of existing dehkan farms do not sufficiently use forecasting approaches in their activities. This situation leads to the implementation of a short-term, needs-based, risk-prone and resource-wasting management strategy. Economic policy not based on forecasting the state of land resources can lead not

only to a decrease in productivity, but also to soil degradation, salinization, erosion and irreversible loss of fertility. Also, in ensuring the sustainable development of dehqan farms, not only the availability of resources, but also the culture of their use, the level of knowledge and skills, the approach to technologies, and the level of integration with the market and infrastructure are important factors. Therefore, the model should be viewed as a complex system that includes not only a resource forecast, but also a socio-economic context, a knowledge system, and management approaches.

A sustainable development model should, first of all, be aimed at developing a careful and ecologically balanced approach to land. Each dehqan farm should have forecast parameters developed based on an individual scenario, taking into account the characteristics of the land area used, the level of productivity, water supply, technical maintenance capabilities, the quality of the workforce, and the level of application of agrotechnical methods.

The analysis shows that environmental criteria are not sufficiently assessed in the development of sustainable land use models. This can lead to a decrease in land fertility, an increase in ecological footprints, and a disruption of the agro-ecological balance in the long term. When developing a sustainable model, indicators such as soil biological activity, organic matter content, water-air regime of the soil, and the rate of natural regeneration should be the main criteria. The land resource use forecast should not only be a statistical assessment, but also serve as a means of forecasting based on scientific methodology, identifying trends, analyzing alternative scenarios, and implementing them in real practice. Such approaches are especially vital for peasant farms located in arid regions. Since they have limited resources, water shortages, severe climatic conditions, and relatively low land quality, traditional approaches do not give the expected results.

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