Ensuring the economic security of agricultural enterprises in the prism of rational land use

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Abstract. The article reflects the relevance of the problem of ensuring the economic security of agricultural enterprises in the prism of rational land use in the conditions of transformations in the system of land relations. It is proved that land resources for business entities in the agricultural sector are one of the main factors of production and reproduction process, a natural resource and an object of socio-economic relations. The features of the land as a means of production are outlined. It is revealed that the conditions of rational land use are the concentration of threats to the economic security of agricultural enterprises. The role of the factor of rational land use in the system of economic security is determined. The economic efficiency of agricultural land use is substantiated. A risk model of resource provision and rational land use of agricultural enterprises in the system of economic security has been formed.

1 Introduction

The practice of managing agricultural enterprises indicates that it is not so important to have a certain resource as to use it effectively. Such a resource is land resources - a multifunctional factor of the reproduction process in the agricultural sector, a territorial basis for carrying out activities, which is at the same time a natural resource, the basis of society's residence, a factor of production, an object of socio-economic relations, the basis of the food security system.

For agriculture, land is the subject of labor. K. Marx emphasized that in the process of economic realization of land ownership during the development of land rent, a circumstance manifests itself, indicating that its value is determined not by its recipient, but by the process of development of social labor [1]. Thus, Marx sets the benchmark for innovation and investment factors of the development of the agricultural sector, which at a certain stage begin to dominate among other factors of the development of the industry. The chain "management + economy + investment + innovation" should acquire systemic features. Of particular value in modern conditions is the K. Marx paradigm, which serves as an abstract ideal standard for theoretical understanding of fundamental processes in the economy and in the agricultural sphere in particular, built from the general to the particular, offering a timeless strategy for the development of the agricultural sphere. Based on the theoretical legacy of K. Marx [1], it can be noted that the starting point for the convergence of theoretical

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achievements of domestic scientists within the framework of the strategy of agrarian development of Russia can be the works of K. Marx as a conditional paradigm, namely the chain "management + economy + investment + innovation".

As a means of production, land has features that distinguish it from other means of production:

1. The earth is the result of a centuries-old soil-forming process (a product of nature), that is, unlike other means of production, it is not created by man. Using the natural basis of the land, landowners and land users must necessarily take into account the basic ecological laws of agriculture: the law of irreplaceability and equivalence of factors; the law of minimum, optimum and maximum; the law of cumulative action or interaction of factors; the law of the return of nutrients to the soil; the law of fruit exchange [2].

2. The earth has an upper fertile layer, thanks to which the final result can be greater than the nested one.

3. Physical non-relocation - each land plot has its own permanent location, which cannot be moved.

4. Qualitative heterogeneity - each land plot is characterized by individual physical and chemical characteristics, as a result of which it may be suitable or unsuitable for production.

5. Spatial limitation - of the total area (15 billion hectares) of the globe, land is about 1 billion hectares.

6. Irreplaceability - like other means of production, land cannot be replaced.

7. A complex reproduction process - it takes about 100 years to reproduce 0.5 - 2 cm of soil.

8. Non-wearability - with proper use, the earth does not wear out, unlike other means of production, and if properly used, it can improve qualitatively and become more productive.

In the scientific literature, a lot of attention is devoted to the study of the problems of rational use of land resources, there are many interpretations of the concept of "rational land use", but there is no single definition of its essential content. The scientists' thoughts boil down to the fact that, with the aim of making a profit, the land user, taking into account the qualitative characteristics of the land resources belonging to him, chooses the direction of specialization. Taking this into account, rational agricultural land use will be one that ensures the achievement of the land user's goal in each specific case. The term "land use" has a dual meaning: on the one hand, it is a system of land use regulated by legislation for various categories of land, land owners and land users, and on the other - a certain land mass, a territory owned or in use.

The category of "rational use of land" was studied by scientists back in Soviet times. Thus, the scientist Aksenenok G.A. emphasized that the main thing in solving the problem of rational use of agricultural lands is to increase their fertility and quality, increase useful elements, which is necessary to meet the needs of society [3]. The scientist formulated two concepts "scientifically based use of land" and "rational use of land", which indicates that the author associated scientifically based use of land with their rational use, but he clearly distinguished them. From his point of view, "rational" does not include the constituent attribute "scientifically based".

The term "rational use of land resources" means the expediency, completeness and degree of efficiency of land use, indicating that the completeness of land use is determined by the degree of their involvement in agricultural turnover, the degree of agricultural development of the land fund [4]. Rational land use is a scientifically based use of agricultural land plots aimed at achieving maximum effect in the process of management, taking into account their qualitative characteristics and specific natural and economic conditions of production and compliance with environmental conditions [5].

Thus, the concept of "rational land use" is complex, including a set of public interests and relations arising from the distribution, use and restoration of land resources, and a set of
scientific ideas about the composition and content of actions that ensure the effective development and use of land resources.

2 Methodology

In the market conditions of management, scientists are increasing attention to the economic and environmental component of rational land use [6]. The allocation of the economic component of rational agricultural land use is explained by the tasks of economic theory, because it is the science of the use of limited natural resources (land) by society for the production of various goods with their subsequent exchange [7]. The allocation of the ecological component is due to the fact that the earth is the habitat of microorganisms, such a natural resource, on the condition of which the ecological stability of the state depends.

G. Chogut identifies two components of the efficiency of agricultural land use: economic and environmental. The scientist defines economic efficiency as the maximum production of products that society needs, at the lowest cost of public labor and resources per unit. The scientist defines ecological efficiency as the preservation of natural characteristics and the sustainable functioning of agricultural systems, of which the earth is a component [8].

Also highlight the environmental, industrial, economic, investment and social efficiency of land use [9].

Scientists led by Ovchinnikova N.G. consider rational land use to be the use of land that provides a scientifically sound economic effect of management and at the same time improves soil fertility and the ecological state of the environment [10, 11].

Gvozdeva O.V., Chuksin I.V., Tokov H.R. propose an ecological and economic mechanism for rational agricultural land use. The economic component includes regulators of influence on land users, the purpose of which is to stimulate their activities to the rational use of land resources. The task of the ecological component is to form a careful attitude to such a unique natural resource as the earth (Fig. 1) [12].

![Economics-ecological mechanism of rational agricultural land use](image)

Fig. 1. Economic and ecological mechanism of rational agricultural land use

Thus, according to the approaches to the definition of a rational land use system, scientists' thoughts can be divided into groups: agricultural economists who are supporters of intensive agriculture; scientists who insist on the use of alternative (biological) farming systems; supporters of soil-protective agriculture, which provides for a rational combination of intensive and biological farming measures aimed at restoring soil fertility. This divergence
of views can be explained by the difference in the definition of the beneficial effect resulting from the use of land. In particular, the economic efficiency of land use is determined using a system of cost and natural indicators. Scientists [13, 14] distinguish natural and cost indicators:

1) natural: crop yields; production of certain types of livestock products per 100 hectares of relevant land (cattle and sheep products per 100 hectares of agricultural land, pig farming - for arable land, poultry farming - for grain area);

2) cost: production of gross output at comparable prices, marketable output at current sales prices, net output and profit per hectare of agricultural land.

Natural indicators characterize the productivity of a certain part of the land, and cost indicators characterize their entire area [14].

**3 Results**

It is advisable to evaluate the economic efficiency of land use, taking into account the system of economic laws and the laws of nature, which requires such criteria for evaluating land management indicators:

- when determining the economic efficiency of various types of land use, it is necessary to take into account the collective and personal interests of land users and landowners, and on the other hand, public interests. This requires the use of both self-financing (commercial) and national economic approaches;

- in the economic assessment of land management, it is necessary to take into account the conditions of reproduction of soil fertility and environmental characteristics of the territory, since the earth is an element of the environment (biosphere);

- when determining performance indicators, it is important to highlight the effect of land management, comparing it with the corresponding costs, ensuring qualitative uniformity and quantitative comparison of indicators in different farms.

Summarizing the views of scientists on the classification and indicators of land use efficiency, the following types can be distinguished: economic, technological, ecological, ecological-economic, social and investment.

So, rational land use embodies the principles and methods of economic optimization of the process of economic activity carried out on a specific land territory. Land use determines the conditions and principles of rational placement, organization and management of production processes, taking into account the differentiation of the properties of land resources and spatial affiliation, heterogeneity, rent opportunities. Proceeding from this, rational land use in agricultural enterprises is interpreted as a socio-economic category that embodies the relationship between landowners and land users in the process of agricultural production in order to meet the needs of the population for food, ensure the restoration of natural soil fertility, increase the productive potential of land resources and their use in conditions of a high level of environmental friendliness. At the same time, rational land use should ensure the economic, environmental, resource-saving and restorative nature of the use of land resources.

From our point of view, rational land use should be considered in a five-dimensional coordinate system:

- economic (economic needs of the use of land resources and soils, the nature of land use, the market of products, the location of production, the level of intensification, infrastructure development);

- technological (the level of land use in the production process, the main criterion of which is a scientifically based system of farming, maximizing production with a certain amount of land resources, minimizing the amount of land resources that provide a given volume of production);
- social (social institutions of land use and land ownership, in particular, economic structure, a set of orders and duties of a person in relation to land, land system, ownership of land, easements, social infrastructure);
- ecological (natural resource potential, agroecological features of soil use, product quality, ecological condition of soils, environmental restrictions);
- investment (a set of investment resources based on the area of agricultural land).

Obtaining an economic effect from the rational use of land can be traced in the implementation of the following set of measures:
- in order to bring the biological characteristics of plants into line with the production and territorial properties of the lands, it is necessary to place crops and form crop rotations taking into account the quality of the lands, their location;
- in order to ensure not only the effective use of soil fertility, but also its rise, technologies should be used that would take into account the characteristics of a particular plot of arable land;
- it is necessary to implement a complex of resource-saving and environmental measures and introduce environmentally friendly technologies;
- concentration of resources for the construction and operation of soil protection, reclamation, environmental protection facilities;
- mandatory compensation for environmental and industrial damage;
- conservation of land, ensuring ecological balance in agricultural landscapes, agricultural systems.

Thus, there is reason to believe that rational land use is the process of influence of subjects (landowners and land users) on the object of land use (land resources) to achieve economic, environmental, and production results at the lowest cost of labor, energy, and materials. The main stage of this process is the development of mechanisms for motivating land use entities.

From the point of view of the resource approach, resource provision is a prerequisite for the functioning of the agricultural enterprise and the basis for ensuring economic security. It can be in different planes: insufficient provision, excessive, unbalanced in quantitative or qualitative terms, which has a destabilizing effect on economic security and causes a number of threats.

It should be emphasized that resource provision in the system of economic security of an enterprise is considered as a set of actions for the search, selection and use of resources of an agricultural enterprise, as well as the creation of administrative and legal, organizational and managerial, technical and technological, moral and psychological, information and analytical conditions necessary to ensure the security of the enterprise from the influence of systemic and non-systemic threats at the tactical and strategic levels of activity.

From our point of view, it is possible to identify threats to economic security by assessing the resource provision of business entities in the agricultural sector, because resource provision is a concentration of threats to the economic security of an agricultural enterprise. To this end, it is advisable to assess the state of resource provision with the allocation of its individual components, which are strongly affected by threats.

Land resources for agricultural enterprises are one of the main factors of production and reproduction process, acting simultaneously as a natural resource and an object of socio-economic relations. Modern land relations are based on market principles, when the main motive for the activity of land users is systematic profit-making in a competitive environment [15].

It is in these conditions that a variety of risks and threats to the economic security of enterprises associated with the rational use of land resources arise. But the process of rational land use is conditioned by the determination of the volume, quantity and nature of the use of various types of resources: human, financial and material resources. Based on this, we have
formed a model for assessing the risks of resource provision of agricultural enterprises in the system of economic security (Table 1).

The proposed assumption that resource provision and rational land use is a concentration of threats to the economic security of an agricultural enterprise determines the need to take into account the risk (threat) of resource provision and rational land use. There is every reason to believe that if land use is unprofitable, the profit margin becomes lower, and land rent is negative, then such land use becomes economically unprofitable. From the point of view of the ecological foundations of land use, such irreversible changes can be considered destruction, after which land use cannot be returned to an environmentally safe state.

Table 1. Risk model of resource provision and rational land use of agricultural enterprises in the system of economic security

<table>
<thead>
<tr>
<th>Causes of threats to resource provision and rational land use in the system of economic security</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>In relation to the activity</td>
<td>By origin</td>
</tr>
<tr>
<td>Objective</td>
<td>Subjective</td>
</tr>
<tr>
<td>The tactical level of the company's activity</td>
<td></td>
</tr>
<tr>
<td>Resource limitations</td>
<td>Improper behavior of staff</td>
</tr>
<tr>
<td>Rising resource prices</td>
<td>Non-utilization of production facilities</td>
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<tr>
<td>Reduction of production</td>
<td>Low qualification of personnel</td>
</tr>
<tr>
<td>Violation of optimal economic parameters of land use</td>
<td>Inefficient use of land resources</td>
</tr>
<tr>
<td>Violation of optimal ecological parameters of land use</td>
<td>Agroecological features of soil use</td>
</tr>
<tr>
<td>Violation of optimal social parameters of land use</td>
<td>Inefficient use of land resources</td>
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<tr>
<td>Raider seizures</td>
<td>The propensity of top management to take risks</td>
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<td>-----------------</td>
<td>---------------------------------------------</td>
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<tr>
<td>Unfair competition</td>
<td>Unsupported trade secrets</td>
</tr>
<tr>
<td>High energy intensity of production</td>
<td>Inconsistency of business processes</td>
</tr>
</tbody>
</table>

The manifestations of these trends are anthropogenic pollution of the environment, soil depletion and exhaustion of chernozems, degradation of land resources, disturbance of natural ecosystems, environmental crises. Social criteria for the onset of destruction of the system of rational land use is a set of parameters of land use, at which the maintenance of the minimum acceptable level of well-being of the population requires more resources than can be obtained by using the available land and resource potential of the territory.

On this basis, safe rational land use is aimed at managing land resources of agro-industrial complex enterprises through the prism of minimizing risks in the sphere of land resources use and protection and is the basis for the development of a new paradigm of land use as a resource of economic activity, affecting the provision of economic security.

4 Conclusions

As a result of the conducted research allow us to conclude that resource provision is the basis for ensuring the economic security of agrarian enterprises, and rational land use is the concentration of threats. Resource provision in the system of economic security of the enterprise is considered as a set of search, selection and use of enterprise resources, as well as the creation of administrative and legal, organizational and managerial, technical and technological, moral and psychological, information and analytical conditions necessary to ensure the security of the enterprise from the influence of systemic and non-systemic threats. Land resources for agrarian enterprises are one of the main factors of production and reproduction process, so there are risks and threats to economic security associated with the rational use of land resources.

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