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Research Article

Improvement of the system of indicators determining the efficiency of the use of agricultural resources in farms

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Abstract

The article presents scientific proposals and conclusions, factors influencing the efficiency of use of agricultural resources, categorization of indicators that determine the efficiency of use of agricultural resources, a multi-level system of indicators.

Keywords: *Agricultural resources, farms, specialized, market economy, improvement, fundamentals, economic efficiency.*

Introduction

The issue of the effective use of agricultural resources in the agricultural economy is one of the most important areas of the world economy today. In conditions of limited resources, climate change, water scarcity, and declining land fertility, it is very important to organize the scientifically based use of available agricultural resources to ensure the sustainable development of farms.

In the system of the agricultural economy, agroresources are the most important component of the production process, which determines economic results through the sum of natural, material, and intangible resources in agricultural activity. The effectiveness and sustainability of agricultural production are directly determined by the degree of rational, rational, and efficient use of these resources.

Literature Review

The history of economic doctrines shows that the concept of "resource" has been interpreted differently in different periods. Economists of the classical school - Adam Smith, David Ricardo, and Karl Marx - highlighted land resources as the natural basis of production. They emphasized that the fertility of land is naturally limited, and labor is a decisive factor in creating value. The concept of "Marginal Yield," introduced by Ricardo, later became the main methodological principle in agrarian economic analysis.

Representatives of the neoclassical school - Alfred Marshall, Leon Walras, Paul Samuelson, and Robert Solow - studied resources from the point of view of economic equilibrium and efficient distribution. In their opinion, the economic value of any resource is determined by market prices and the competitive environment. Therefore, the effective use of resources is ensured only through economic freedom and the full functioning of market mechanisms.

Economists of the institutional school - Torstein Weblen, Douglas North, Ronald Coase, and Oliver Williamson - scientifically substantiated the role of socio-economic institutions influencing resource efficiency. According to them, if the effectiveness of legislation, property rights, and state policy is low, the allocation of resources will be inefficient. From this point of view, land use rights in agriculture, credit and subsidy systems, as well as mechanisms of state support, are an integral part of the agroresource system.

Research Methodology

In the process of writing this scientific article, a range of research methods were applied, including systems analysis, historicism and logical reasoning, induction and deduction, analysis and synthesis, comparative and selective analysis, as well as monographic analysis and the method of classification.

Analysis and Discussion of Results

The economic efficiency of the use of agricultural resources by agricultural enterprises is largely explained by the use of modern high-performance technical means, the introduction of advanced agricultural technologies, and the level of mechanization and automation of production processes in scientific literature and practical analysis. However, the practice of agrarian economics shows that, although these factors are necessary conditions for increasing production efficiency, they do not guarantee stable and high economic results in themselves. Because agricultural production is a complex socio-economic system formed under the influence of natural and climatic factors, the social environment, labor relations, and institutional conditions.

From this point of view, the efficiency of the use of agricultural resources is inextricably linked not only with the technical and technological level, but also with the social conditions of production, forms of labor organization, personnel qualifications, the quality of management decisions, and the level of human capital development. Favorable working conditions, a fair wage system, the availability of social guarantees, and opportunities for professional development increase the activity of the workforce in the production process. This, in turn, indirectly increases the effectiveness of the use of agricultural resources. Therefore, although these factors do not directly affect economic efficiency, they are considered as factors with a decisive mechanism of indirect influence in its formation and are an integral part of the general system of factors.

The quality indicator of the activity of any enterprise or economic entity is manifested through its effectiveness. Efficiency is a universal category that expresses the level of use of enterprise resources, the possibilities of achieving the set goals, and the effectiveness of economic activity. In the practice of assessing socio-economic systems, such indicators as profitability, liquidity, solvency, financial stability, and asset turnover are widely used. Although these indicators provide a certain picture of the financial condition of the enterprise, they do not fully reflect the overall systematic effectiveness of the production process.

More specifically, these indicators are characterized as one-dimensional, i.e., partial performance indicators. Although they allow for the analysis of individual aspects of the enterprise's activities, they have limited opportunities to reveal the interrelationship between resources, synergistic effect, and complex economic results. Therefore, when assessing the activities of agricultural enterprises, there is a need to form multidimensional, integral, and systemic performance indicators.

Efficiency is one of the fundamental categories of economic science and is a constant object of research both in economic theory and in the processes of practical management. Efficiency reflects the general regularities inherent in all stages of the economic process, i.e., the balance between the expenditure of resources and the achieved results. In this regard, efficiency is considered one of the main criteria for ensuring economic growth, competitiveness, and sustainable development.

Differentiation of efficiency in various areas allows for a deep analysis of the production and management activities of the enterprise. Using the example of agricultural enterprises, the division of efficiency into technological, distribution, and economic types is the most scientifically acceptable approach. Such a classification makes it possible to determine at which stage of the production process efficiency is being lost.

Technological efficiency represents the degree of maximization of production volume using available agricultural resources - land, water, labor, technical, and energy resources. Here, the main attention is paid to the modernity of production technologies, resource productivity, and the intensity of their use. With high technological efficiency, more products are produced with the same resource consumption, which leads to a decrease in the cost of production.

Distribution efficiency refers to the state of achieving a specified result with minimal costs through the rational and targeted distribution of resources in the production process. This type of efficiency is associated with ensuring a balance between resources, reducing unnecessary costs, and achieving economic efficiency. In the case of low distribution efficiency, even with the use of modern technologies, economic results remain limited.

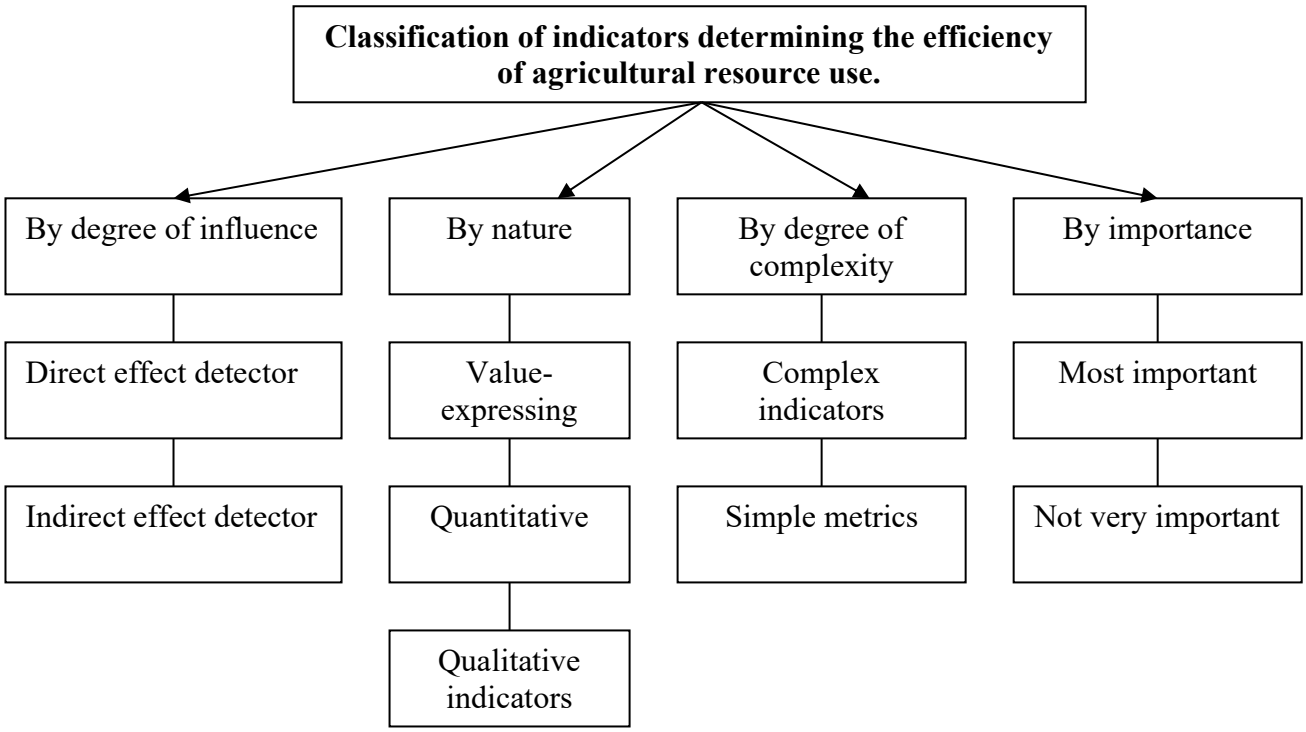

Figure 1. Classification of indicators determining the efficiency of agricultural resource use[1]

Economic efficiency is considered as the integral result of technological and distribution efficiency. It represents the final economic results achieved through the use of agricultural resources - profit, income, value addition, profitability, and economic growth rates. Therefore, economic efficiency is a complex indicator of decisive importance in the overall assessment of the activities of an agricultural enterprise.

When assessing the economic efficiency of the use of agricultural resources, the classification of indicators according to various criteria is an important stage of scientific analysis. The division of indicators into quantitative, value, and qualitative indicators allows for assessing the results of resource use in various aspects. Also, the division of indicators into groups of direct and indirect influence, simple and complex, the most important and relatively secondary, serves to identify the main factors influencing effectiveness (Figure - 1).

The division of efficiency indicators into such categories makes it possible to determine the degree of significance of factors influencing efficiency in the economic analysis of production processes, to identify internal reserves, and to scientifically substantiate management decisions. At the same time, it is advisable to form indicators based on a multi-stage system depending on the stages of analysis (Figure - 2).

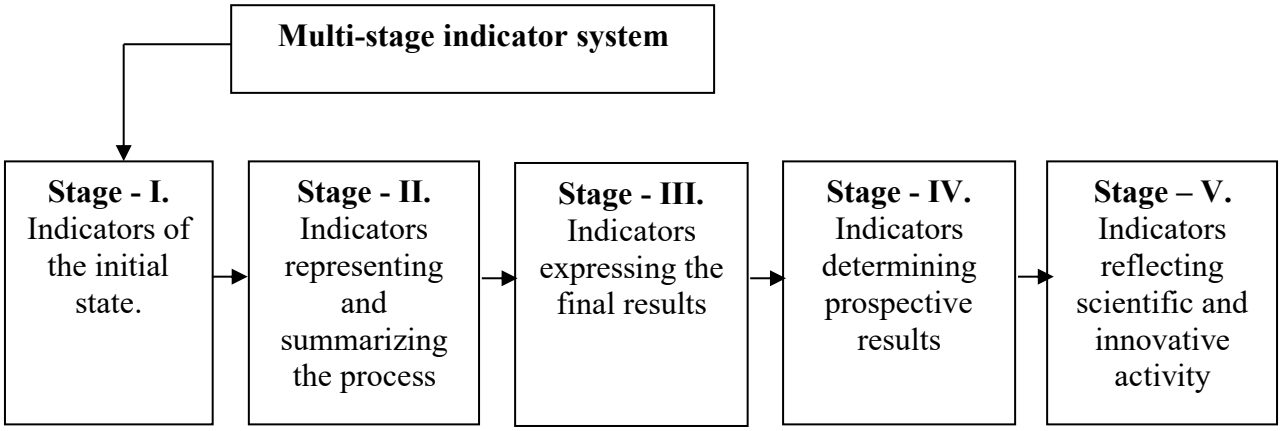

Figure - 2. Classification of multi-stage indicator systems[2]

[1] Compiled by the author.

At the first stage, the consumption of primary resources involved in the production process - labor resources, capital, natural resources, financial and credit resources, and material and technical resources - is assessed using indicators reflecting the initial state. This stage serves as the basis for determining the production potential of the enterprise.

In the second stage, intermediate results achieved in the process of using agricultural resources are analyzed using indicators that reflect and summarize the process.

At the third stage, indicators reflecting the final results are formed, and the final economic effect of production activities is assessed.

In the fourth stage, economic results that can be achieved in the future are forecasted.

The fifth stage, is aimed at a comprehensive assessment of the level of implementation of innovative approaches, digital technologies, and research results in the process of using agricultural resources, which is important in determining the potential for innovative development of the agricultural system.

In the context of market relations, the strategic task facing agricultural enterprises is to achieve maximum economic results with minimal production costs. This is ensured by the rational use of agricultural resources, their conservation, and scientific management of production. From this point of view, profit is considered as the final indicator of production efficiency. In the production process, the head of an agricultural enterprise, along with material resources, also expends his intellectual, organizational, and managerial potential, which requires taking into account the human capital factor when assessing economic efficiency.

Summary and suggestions

1. Dividing the indicators of economic efficiency into two directions according to it is advisable to determine, in particular:
   Technological efficiency is the state in which an enterprise achieves maximum profit by using available resources for the production of a certain product.
   Distribution efficiency is the state in which an enterprise achieves minimal resource consumption for the production of a certain product.
   Economic efficiency, which we determine by combining these indicators, allows us to more accurately show the efficiency indicator in the economy.
2. By classifying indicators that determine the efficiency of the use of agricultural resources in farms, it is possible to determine them and thereby obtain maximum profit with minimal resource consumption.
3. We consider it expedient to group the indicators into four more groups depending on the stages of the effectiveness analysis. For example, to fully analyze any economic process, it is necessary to approach it step by step. In this case: indicators analyzing the initial state, indicators reflecting and summarizing the current state, indicators reflecting the final results, a system of indicators determining what results can be achieved in the future are used. When calculating these indicators, preliminary, summarizing, and final indicators are taken as a basis.

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[2] Source: Compiled by the author.

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