ENSURING ECONOMIC SECURITY OF AGRICULTURAL ENTERPRISES IN THE CONTEXT OF DIGITALIZATION AND GREENING OF THE ECONOMY

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Abstract

The article proposes scientific and methodological principles for forming a model of sustainable agricultural development in the context of digitalization, based on the general concept of socio-ecological-economic system development. This approach takes into account the prerequisites, principles, and unified mechanisms for achieving the model's objectives. The economic security system of agro-industrial enterprises should include a sustainable development concept, innovation and investment strategies, innovation policy, and regulatory mechanisms for agricultural activities. It has been established that the formation of an effective model for regulating sustainable agricultural development in the context of digitalization, based on adaptability and the ability to generate a synergistic effect, is possible only when maintaining balance among various potential components, with a focus on natural potential. The study concludes that assessing the effectiveness of sustainable agricultural development potential — through the level of its competitiveness and resilience — should be carried out from the perspective of systemic integrity, oriented toward final production and the implementation of strategic goals or tasks.

Keywords: sustainable agricultural development, digitalization, socio-ecological-economic systems, economic security, agro-industrial enterprises, innovation policy, investment strategies

I. Introduction

Modern trends in the digitalization of the national economy are not limited to the relevant technical and technological processes, but consist in their extremely complex symbiosis, which requires the harmonization of permanent social demands and needs through an effective reorientation of the mechanisms for regulating the activities of business entities towards sustainable development. Agriculture in the context of digitalization, as a complex open system, is characterized by general patterns of development that are influenced by exogenous and endogenous fluctuation parameters. Negative trends in the functioning of national agriculture are due to a combination of objective factors, namely: loss of positions in international agricultural markets, low level of effectiveness of innovation activities, inefficiency of reforms in agriculture, etc. Despite the above, the agrarian specialization of our country and the digitalization processes, an urgent problem arises of neutralizing the threats of degradation of agriculture and using the potential opportunities to

ensure its sustainable development, the solution of which involves the formation of a sustainable development model consistent with the presented conditions by changing the paradigm of thinking in society and positioning agriculture as a means of sustainable growth of the national economy.

II. Methods

A significant contribution to the development of issues of regulation of sustainable development of agriculture was made by the following scientists: A.V. Sidorin [1], V.V. Sidorin [1], M.S. Oborin [2], A.N. Lazutkin [3], L.I. Lebedeva [3], M.V. Belyaeva [3], O.E. Nikonets [4], V.V. Kazakov [5], E.V. Prudnikova [5], K.A. Kalashnikov [6] and others. In the methodological aspect, we share the position of A.V. Sidorin, V.V. Sidorin [1] regarding the non-identity of the concepts of "innovative development model" and "sustainable development model". At the same time, we propose to consider the sustainable development model as a structure, strategic and tactical goals of its development, an assessment of the resources that such a system has at its disposal, mechanisms for processing existing resources [2]. A.N. Lazutkin et al. define the sustainable development model as a model of economic development based on high technologies that contribute to the creation of competitive products in the external market [3]. Despite the one-sidedness of this provision on the creation of competitive advantages only in the external market, the emergence of a sustainable development regulation model is undeniable.

The purpose of the article is to study the scientific and applied foundations for the formation of a model for regulating sustainable development of agriculture in the context of digitalization and greening of the economy, ensuring the economic security of agricultural enterprises.

In preparing this article, general scientific methods of comparative, systemic, structural and functional, economic and statistical analysis were used. The methodological basis was scientific works on theoretical and applied aspects of the development of the formation of a digital economy and management of the economic security of an enterprise.

IV. Discussion

I. Subsection One

The general model of regulation of sustainable development of agriculture and its socio-ecological-economic component systems is not isolated, but is included in the national model of sustainable economic development. The main institutions in the information society are integrated structures that combine the production of new knowledge and its commercialization. In general, the model of regulation of sustainable development is characterized by a complex structure, the main elements of which are: generation of scientific knowledge; level of education and advanced training; commercialization of innovations; technology transfer; protection of intellectual property; regulatory instruments. It should be noted that the model of regulation of sustainable development of agriculture will be effective if the following conditions are met: the readiness of society and its institutions to carry out activities based on the principles of sustainable development; an appropriate investment and innovation climate to ensure sustainable development of agriculture; the formation of a system for regulating and ensuring the implementation of the model of sustainable development of agriculture, which provides for the development of a concept of sustainable development, state innovation policy, mechanisms for regulating innovation activities aimed at satisfying and uniting socio-ecological-economic interests. Digitalization of socio-ecological-economic processes requires the development of new methodological approaches to the formation of a model for regulating sustainable agricultural development. Consequently, the development of a general model for regulating sustainable agricultural development and the choice of necessary strategies should be

based on the use of positive world experience and take into account the natural features of the regions of Russia and the general socio-economic and environmental state of the country, in turn, taking into account the needs of customers and observing safety requirements.

In the process of choosing a model for sustainable agricultural development, there is a need to develop regulatory mechanisms in accordance with the requirements and criteria for assessing modern global systems. In turn, we note that in the context of globalization, the pressure on all participants in the global process is significantly increasing, therefore, competitive advantages will be more dynamic and flexible, which should be characterized by complex features with an active target focus on ensuring sustainable development. It is the implementation of such a requirement that is possible in the context of the implementation of the model for sustainable development of agricultural enterprises.

The model for sustainable agricultural development in the context of digitalization should be based on an integrated system that will take into account various types of innovations: product, managerial, process, organizational and information, technical and technological and biological. The types of innovations in the agricultural sector are determined by the characteristics of its functioning and the results of its activities. The specific features of agriculture include: the use of natural resources in production, which implies the need to ensure environmental safety and rational use of natural potential; differentiation of the innovation process taking into account socio-economic, organizational, managerial, technical, technological and other systems that are combined to create innovations; agricultural products are an important element in ensuring human life, which significantly affects health, and therefore, innovations in the agricultural sector should ensure priority for improving the quality of agricultural products, their safety and ensuring environmental requirements. The overall effectiveness of the sustainable agricultural development model in the context of digitalization is primarily determined by the level of balance of all its components as capabilities of business entities. Only a systemic balance of the sustainable agricultural development regulation model helps to take into account the principles of adaptability and the ability to ensure a synergistic effect from its implementation. Natural potential is the basic one that influences the formation of other types of potential in order to ensure the maximum usefulness of using the corresponding potential capabilities of a breed, plant varieties, etc.

Since the market economy changes certain criteria for assessing the synergistic effect of the results of innovative activities in the agricultural sector, this study proposes to carry out such an assessment due to the organizational and managerial interaction of the results of innovative activities with the results of promoting agricultural products to consumers, through the use of a logistics chain. After all, such an approach expands the content and capabilities of the model for regulating sustainable agricultural development, considering it in interaction with elements of the capital circulation, taking into account the target guidelines of the activities of agricultural production entities and allows assessing the synergistic effect based on the criteria of usefulness and competitiveness of innovations.

The effectiveness and quality of the model for regulating sustainable agricultural development in the context of digitalization is influenced by a combination of factors, namely: the type of strategy and its validity; time lag; cyclicality within the life cycle of the innovation process; the level of coverage of the regulatory system elements by innovative processes; the level and consistency of the sustainable development model; the level of development and integration processes; forecasting global transformational changes; preventive structural and qualitative changes in the existing innovative potential in the agricultural sector; quality of regulation of social, labor, financial, economic, institutional relations and relations in the field of innovative activity; the level of innovative activity of agricultural entities and the effectiveness of mechanisms for its activation; the level of development of innovative infrastructure at the macro, meso and micro levels.

The content, structure and performance of activities are particularly influenced by integration processes in agriculture, which are becoming especially relevant every year. With the growth in the number of integrated agro-industrial structures, the level of competitiveness of business entities

increases. And the competitiveness of agro-industrial raw materials is usually realized through the competitiveness of the final product, which helps to balance supply and demand for it.

Integrated agro-industrial structures, if properly organized and with an effective system of state regulation, are capable of:

1) timely reorienting capital to neutralize existing problems and threats, ensuring sustainable development of all components of the corresponding integration process in the agricultural sector;

2) balancing socio-economic interests;

3) effectively regulate the formation and use of the existing potential of agricultural entities;

4) timely and efficiently ensure the functioning of the system of competitive advantages as a basis for maintaining competitiveness and sustainable development.

II. Subsection Two

Consequently, in the context of deepening globalization processes, agricultural entities are required to reorient their core activities in accordance with the principles of continuous sustainable development. In turn, the main source of their competitive advantages and ensuring food security of the country is the growth of productivity both in crop and livestock production, and in the areas of improving product quality, preserving natural resources, protecting the environment, etc. When implementing the presented provisions, agriculture in the context of digitalization has a number of both national and common features for all countries.

The factors that influence innovative activity in domestic agriculture include [4]: the level of formation of the market for innovative products; low solvency of producers, which limits opportunities for acquiring innovations; imperfection of the mechanism for financing technology transfer and their commercialization; inadequate investment climate; insufficient level of state support for agriculture; imperfection of market infrastructure.

Consequently, the introduction of innovations in agriculture should primarily focus on the use of competitive advantages to ensure the implementation of innovative projects. For domestic agriculture, it is possible to make investments more attractive and effective by developing and launching a system of state mechanisms that should be based on the priority of scientific research results, organizational and institutional changes aimed at increasing the efficiency and effectiveness of scientific research, as well as creating conditions for ensuring the commercialization of their results.

To ensure the implementation of long-term programs for the development of agriculture in the context of digitalization, it is advisable to introduce institutional and managerial innovations, an important place among which in modern society is occupied by ICT and models of commercialization of innovations. Given the new needs for the commercialization of scientific research results, there is a need to reorient the existing regulatory model from centralized to decentralized. As a result of research into global experience, the prospects of proposals for a wider involvement of agricultural producers in decentralized state regulation were established. Positive, from the point of view of studying experience, is the use of new approaches in supporting the process of commercialization of scientific research based on state funding, but with the involvement of scientific and educational organizations and the public.

Domestic scientists most often include support for small businesses among the methods of stimulating the sustainable development of agriculture [5]. In turn, they support the need to create and provide state support for various forms of cooperation and integration of scientific, educational,

industrial, financial and public organizations, starting with agroparks, research centers, and innovation incubators. However, the problem of implementing such theoretical and conceptual achievements usually lies in the mistrust of agricultural producers in state and local authorities, their ignorance, and often in the lack of support for agriculture.

The priority tasks and features of the implementation of the model for regulating sustainable development of agriculture in the context of digitalization are: the need to conduct research and development work, which will facilitate the use of opportunities for the development of genetic research, combining an effective regulatory system and technologies that complement the relevant achievements of genetics; reducing the time for funding scientific research; the formation of an organizational and institutional structure aimed at simplifying the process of formation and implementation of agricultural innovations in the context of digitalization. Thus, agriculture has features in the implementation of the sustainable development model, because its system-forming factors are biological assets and target orientation in the context of ensuring food security of the state. Such features determine the methodological basis for research and evaluation of the results of sustainable development of agriculture in the context of digitalization.

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