Managing the production of agricultural export products in the context of sustainable development

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Abstract. The relevance of the research undertaken in this article is determined by the fact that recently the concept of sustainable development has changed significantly, and from an auxiliary element ensuring the implementation of production processes, it has become a powerful tool for organizing and conducting production activities in agriculture. Grain production management, based on the use of the concept of sustainable development, is the most important direction for optimizing the production system in any developed country. The presented article is devoted to the study of the peculiarities of the organization and management of agricultural production in the transition to sustainable development. The necessity of using the concept of sustainable development as a basic condition for the successful development of environmentally friendly agricultural production is substantiated. The perspective directions of interaction of participants in the agricultural production system during the transition to sustainable development are considered. A system of measures adapted to the conditions of environmental management is proposed, contributing to the successful functioning of agricultural production, taking into account the basic principles of sustainable development.

1 Introduction

It is important to note that it is the food component that determines such an important role of grain in the country's economy, which gives reason to talk about its dominant mission in ensuring food security. That is why in all sectors — regardless of the forms of land use — the problems of grain production are under the control of the state, new technologies and technical means are being introduced.

Grain production, which is the basic branch of the agro-industrial complex, has a significant impact on the formation and functioning of the food market, the definition of agri-food strategy, as well as economic security.

Modern grain production is the largest intersectoral complex that unites various industries focused on both production and processing of agricultural raw materials in

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accordance with the requirements and needs of this sector, as well as with the needs and
demand of the population.

Grain resources are an indispensable raw material in the production of pasta, bread and
bakery products; they are used in the production of combined feed in animal husbandry
(milk, meat, egg, etc.), in the technical field in the production of ethanol, alcohol, glue, etc.

The backbone branch of crop production in our country is the grain subcomplex, where
grain crops occupy more than 50% of all agricultural acreage put into circula-tion. The
priority importance of ecological grain production in the agro-industrial complex is
determined by its specific role in the formation of food resources.

The strategy adopted to date of orientation of grain-producing regions to maxi-mum
self-sufficiency in grain resources, unstable dynamics of the global and domes-tic grain
market, and increase in transport tariffs for grain transportation services lead to slow rates
of formation and development of an optimally rational territorial and sectoral structure of
grain production. As well as lead to inefficient use of the existing agro-climatic potential of
the country's agriculture, the division of the domestic grain market and the formation of
markets, locally closed by the territory of a separate region. For a long time it was believed
grain production does not have a negative impact on natural resources.

In the context of the transition to sustainable development, the negative impact of the
grain industry is becoming more intense and global than the impact of other sectors of the
national economy. In this regard, these negative circumstances of the functioning of grain
production predetermine the need to address environmental issues in the context of
designing all production processes based on sustainable development approach as an
important factor in increasing competitiveness.

It should be noted that among many priority tasks of the Russian production sys-tem, a
complex task of increasing its competitiveness is put forward, on the solution of which the
result of the work of not only the entire economic system as a whole, but also individual
industries depends. This situation is largely due to the globalization of the economy and the
intensification of the problem of cross-country competition.

In all developed and developing countries of the world, promising directions of
sustainable development are being sured on the basis of an innovative approach reflecting
their position in the global economy, ensuring increased efficiency in the global division of
labor. In this context, competitiveness is not only an indicator of the development of the
national production system, but also an indicator of the degree of its involvement in the
world production system.

Thus, it is important to state that in the implementation of the tasks of increasing the
competitiveness of the national production system, the priority direction is to increase the
competitiveness of grain production based on sustainable development approach and
ecological organization of production, the products of which are the main export goods that
ensure the income of the majority.

A study of the practical experience of using the concept of sustainable develop-ment in
foreign countries has shown that farming in general, and the grain industry in particular,
ensures cost-effective production of agricultural products while reducing costs and
environmental burden.

As it is known, land is the most important resource in grain production. According to
the authors' opinion, the current unsatisfactory state of agricultural land resources has
necessitated a step-by-step solution to the urgent problem of preserving and im-proving the
quality of agricultural land resources using the concept of sustainable development.
Therefore, it can be concluded that solving the problem of reproduction of land resources
should be the main task not only of agroeconomics, but also of innovative economics,
which will ensure an increase in the quality of agricultural land used and will lead to the
sustainability of agricultural production.
2 Materials and methods

The features of sustainable development approaches in the modern production system are described in the works of domestic and foreign scientists, among which should be noted Azizov F.H. [1], Fedko N.V., Medvedkina E.A. [2], Reshetnikova N.N. [3], Snigireva G.D. [4], Vazirov A.K. [5], Vinogradova E.G. [6].

The features and conceptual problems of modern ecological development of agriculture in general and the grain industry, in particular, are revealed in the works of Glazyev S.Yu [7], Dementieva A. A. [8], Sidorov V.A. [9], Vorobyov N.N. [10].

This circumstance indicates the need to move to the concept of sustainable development in the process of planning and managing grain production, which allows to overcome the disunity of existing management approaches, more fully take into account the influence of biological characteristics of cultivated crops, climatic, soil, agrotechnical and organizational and economic factors on grain production, the level of yield of agricultural crops, rational use of land resources and reproduction of their fertility.

The systematic formulation of the problem is a type of methodological research that includes the development of meaningful principles of the vision of the objects of study based on the analysis of effectiveness.

In this regard, the radical direction of improving the efficiency of functioning, the level of competitiveness of grain production in Russia, as well as strengthening the country's influence on the global food market is the ecological organization of grain production based on the concept of sustainable development. Such an organization of production will ensure the coordination of local criteria for the functioning of grain production, find reasonable solutions to optimize the production conditions of cultivated crops with the rational use of available resources.

The article is written using classical and modern works of domestic and foreign scientists in the field of modern theory and methodology of green economy and sustainable development, economic theory, management theory, as well as fundamental works in the field of analysis of the management of grain production, ecology of agro-industrial production. The work uses specialized, scientific and methodological literature on the problems of research. The general methodological basis for the development of the tasks set was an integrated approach as a general methodological principle of scientific research of sectoral systems in the modern production system.

In the course of solving research problems, monographic, abstract-logical, tabular, numerical, comparative, synthesis of economic processes and phenomena were also used as methods of economic diagnostics, systemology; at the same time, each of the methods was used in accordance with its functional capabilities, which ensured the representativeness of the research results, the reliability of the conclusions.

3 Results and Discussion

The analysis of the elements included in the grain production shows that the specifics of its functioning directly depends on the complex of the industries and sub-sectors that form it, which in general provide the possibility of implementing sustainable development mechanisms.

Outdated technologies used in domestic agricultural production are an obstacle to ensuring competitiveness in foreign markets. It is known from the works of researchers of this problem that "in the world more than 400 million hectares are cultivated using minimal tillage technologies. According to zero-till technologies, about 100 million hectares are processed, among which 84% of the area is located on the American continent. The leaders
in the application of conservation farming technologies are the leading grain exporting countries: USA, Argentina, Brazil, Australia, Canada" [1]

Firstly, there is a lack of the necessary modern knowledge base and techniques, as well as practical training of specialists in the field of ecological agriculture and sustainable development. To overcome this barrier, it is important to ensure the possibility of specialized internships for the leadership of leading agricultural enterprises and organizations at enterprises of grain-producing countries that grow ecological grain products.

Secondly, the lack of a system of standardization and certification of cereals. This circumstance prevents the free sale of grain resources, both on the domestic and foreign markets.

Thirdly, the unwillingness of economic entities engaged in grain production to introduce innovative mechanisms, as well as the lack of interest in production based on concept of sustainable development. This is due to the fact that the transition to such conditions of grain production will lead to an increase in the level of costs, and as a result, an increase in the cost of grain due to the introduction of modern technologies, grain certification, etc. Studies of domestic scientists have shown that, for example, "an economy in the Tambov region with an area of 250 hectares for the production of environmentally friendly grain will need to invest 485-720 thousand euros in machinery alone, that is, at least 2 thousand euros per 1 hectare." [1]

In general, the effectiveness of the ecological organization of grain production based on sustainable development approach depends on the successful implementation of the following system of measures: rational organization of the structure of crop rotations of acreage; ensuring the ecological safety of grain production, preventing man-made environmental pollution; development of the domestic livestock industry; implementation of financial support for the introduction of innovative technologies at the regional and federal levels.

The informational and legal nature of communications in the system of sustainable development is to ensure the sustainable and effective functioning of the grain farming system and related sectors of the economy through the formation of a developed information exchange in order to more fully and reliably meet the needs of grain market entities for reliable information on quantitative and qualitative parameters of grain production, distribution, exchange and consumption based on the creation of a stable legislative framework.

The organizational and technological nature of communications in the system of sustainable development ensures the rational use of soil-climatic, biological, man-made and labor resources to increase the efficiency of the territorial and sectoral structure of grain production, which implies the concentration of grain cultivation resources in the most favorable bioclimatic zones.

The socio-ecological nature of communications in the system of sustainable development contributes to the development of the grain industry, aimed at increasing the production of competitive products through the implementation of sustainable development approaches, contributing to the expanded reproduction of soil fertility by biologization of agriculture, the use of natural, material and labor resources of rural areas in economic turnover.

The basic socio-economic conditions and factors of the ecological organization of grain production based on sustainable development approaches are the following:

- Radical or evolutionary transformation of the socio-economic structure of the country, region, contributing to profound changes in the production, commercial, transport, financial and other spheres of management.
• Formation of forms and methods of economic thinking and management appropriate to modern production conditions at all levels stages of production, sale, consumption.
• Rationalization of the territorial allocation of management bodies and the material and technical base of business entities.
• Implementation of investment programs for the creation and design of production complexes, consumption of material and related flows.

The main determinant factor of the ecological organization of grain production based on sustainable development approaches is the possibility to fundamentally increase the efficiency of using the existing climatic, technical, production potential of agriculture, the degree of adaptation of grain-producing enterprises to competitive market conditions of the national and world grain market.

Thus, according to the degree of influence, it is possible to classify groups of favorable and unfavorable factors affecting the ecological organization of grain production on the principles of sustainable development approach. The group of favorable factors that have a positive impact consists of such factors as the favorable conjuncture of the world markets of grain resources, favorable climatic conditions, rational investment policy of the state, etc.

The unfavorable factors include those that reduce the efficiency of production of grain resources. For example, the irrational policy of the state associated with a long period of restrictions for producers.

All factors can be grouped into a separate group according to the level of specificity criterion, stratifying them in this group into global and local.

Global factors include the level of competition in the grain market, the implementation of the doctrine of ensuring food security, to local is the territorial–sectoral division of grain farming, the level of competitiveness of grain market participants. Thus, summing up, we note that the use of the considered approaches to assessing the effectiveness of the concept of ecological organization of grain farming, taking into account the sustainable development orientation, contributes to improving the quality of management and the results of the activities of this system.

In modern conditions, the ecological organization of grain production based on the sustainable development orientation is an indicator of the stability of the country, which provides the necessary level of food security of the country. Moreover it allows stable export to foreign markets of the necessary volumes of grain crops, expanding and strengthening the national interests of the country in the world market.

In this regard, the following features of the ecological organization of grain production based on the sustainable development approach can be distinguished. The first is that the stimulation of ecological production based on the sustainable development approach provides high incentives for the self-development of the grain industry, the issue of independent development of the village is being solved, without significant financial injections for direct state support of the grain sector. Considering the above, it can be concluded that indirect support for grain production is much more effective than direct support for grain production and has a multiplicative economic effect, since it contributes significantly to self-financing of agribusiness, budget savings, contributes to solving social problems (employment of the population, increasing incomes of agricultural producers).

The second is manifested in the implementation of the principle of preferred export of environmentally safe high-quality grain. The current situation on the world grain market is characterized by the fact that the demand for grain resources is higher than the supply and the price dynamics as a whole has a positive orientation, and, as a result, the requirements for the quality and environmental friendliness of grain are getting higher and higher.

The third feature is due to the interaction of the national grain market with the market of border states. Analysis of the dynamics of grain flows on the world market has shown that
the geography and export volumes of environmentally safe grain resources are influenced by the markets of border countries, which are a market, in particular, for small farms.

The fourth feature is the observance of the ecological balance in the intensification of the development of grain production based on the sustainable development approach. Compliance with the ecological balance requires the introduction of serious social and technical innovations that allow compliance with environmentally oriented requirements for agricultural products [11].

4 Conclusion

The methodology for assessing the effectiveness of the implementation and functioning of the greening mechanism, which includes a system of indicators and contains an object, subject, method of assessment, will help determine the economic, social and environmental effectiveness of grain farming based on the sustainable development approach.

The conducted research has shown that in the process of transition to a market economy, serious environmental, economic and social difficulties have arisen that have a negative impact on economic growth rates, the state of the natural and economic environment, and the potential of agriculture.

The intensification of the crisis situation in agriculture, manifested in the degradation of land resources, along with gaps in the strategy of agrarian reform, the lack of sound provisions of price, financial and tax policy, are due to the inconsistency of approaches to the formation of an effective policy of ecological organization of grain production, and the use of the sustainable development approach.

At the same time, insufficient theoretical and methodological elaboration of the mechanisms of ecological organization of grain production also affects. In this regard, the processes taking place in the agricultural sector as a whole and in grain production suggest the need to comprehend and develop a more perfect concept of the ecological organization of production and distribution functions, the use of the sustainable development approaches in the implementation of agrarian and ecological transformations.

Thus, the article proves that the development of mechanisms for the ecological organization of grain production on the basis of the sustainable development approach that combine the goals of ecological growth of production with the tasks of preserving and improving agroecosystems in agriculture, to ensure the transition to the strategy of optimal environmental management.

Thus, the main goal of the ecological organization of grain production on the basis of the sustainable development approaches should be the development of a set of methods of grain production based on the use of such systems of organization of agricultural farming, which implement the principles of rational environmentally safe environmental management, and ensure the growth of grain production, as well as the solution of socio-economic problems of agriculture.

References

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