The current state of innovative development of agriculture in Russia

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Abstract. The development of a competitive, socially and strategically oriented agriculture becomes possible only if it switches to an innovative development path. Agriculture is an important and promising industry for Russia, therefore, its development in the direction of sustainable positive dynamics of providing food resources to the country's population and the entry of domestic agricultural products into foreign markets requires the definition of strategic guidelines for innovation in this industry, in accordance with which the state policy of ensuring the competitiveness of agricultural enterprises will be implemented. The article analyzes the current state of innovative development of the agricultural sector in Russia. The importance of introducing innovations in the agricultural sector is also highlighted, and the main stages of this process are described. The positive aspects and threats that hinder the effective development of innovative agricultural activities are presented. The analysis of the main problems of innovation implementation is carried out and the ways of their solution are given.

1 Introduction

The level of food security of the population, the state of national security and the country's economy depend on the effective functioning of agricultural production as the most important sphere of the economic complex. In the agricultural sector of our country's economy, the development of innovative activities is in its infancy, with a number of problems. Therefore, there is a need to identify the essence of the causes, search for their solutions and improve the use of innovative modern technologies in the agricultural sector of the country.

An objectively determined task at present is the formation of an innovative model of agriculture capable of ensuring the advanced development of the industry, sustainable economic growth, which provides for stable annual growth in gross output and increased labor productivity, a high level of global competitiveness [1].

The realization of this goal is quite real, but only under the condition of intensive technical and technological renewal of production, the introduction of highly productive varieties and hybrids of plants, animal breeds, the practical application of scientifically sound recommendations, the adoption of innovative organizational decisions, etc.

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In the development of the institutional framework for the formation of an innovative agrarian economy, the central positions are assigned to science, which, with the support of the state, should both create new knowledge and put it into practice. In such conditions, the range of functions of scientific institutions is significantly expanded to the level of organization of the innovation process. For its part, the state should perform the function of institutional investment, stimulating the organization of venture funds, as well as setting standards for innovation [2].

The integration of science and production structures on the basis of partnership will ensure the optimization of transactions and transaction costs of innovation activities. This is the only way out in creating an effective structure of the innovation market, the main institutional aspect of its long-term functioning. However, in order to realize this idea, fundamental institutional transformations should be carried out, rebuilding the innovation production system. The central figure in this system is the knowledge economy. In this aspect of solving the problem, the concept of acquiring entrepreneurial traits by science, which provide for making scientific developments marketable, is acceptable.

There are formations in the structures of the agricultural business that, thanks to sufficient financial opportunities, primarily attracting capital from other industries, systematically introduce advanced innovative developments. These are enterprises for the cultivation of grain and industrial crops, pig farming, poultry farming, closed-ground vegetable growing, using modern equipment and the latest technologies.

We believe that the need for an intellectual product should become the main engine in the development of the intellectual property market in Russia. Intellectual products should be competitive, strengthening the position of the domestic commodity producer in the world market and ensuring an increase in the competitiveness of the country's economy in world rankings.

The formation of the infrastructure of the innovation and intellectual property market is one of the important areas of activation of the national innovation policy.

2 Materials and Methods

The works of scientists, including A.I. Altukhov, A.I. Bazilevich, T.K. Blokhina, V.Ya. Gorfinkel, E.A. Kozlovskaya, V.D. Kortnev, I.G. Ushachev and others, are devoted to the development of innovative agricultural activity in Russia.

In their works, the scientists investigated the role, essence, development, reasons for the needs of innovative activity in agriculture in Russia, problem solving and development prospects. However, the works of scientists do not specify innovative technologies that should be introduced to improve the state of the agricultural sector.

In modern conditions, innovation activity is considered worldwide as one of the main conditions for the modernization of the economy. Therefore, one of the most important elements of the activities of agricultural enterprises should be the development of its innovation policy, which will contain important strategic and tactical aspects.

In the course of the research, specific methods, including economic and statistical (comparison, grouping, series of dynamics, correlation and regression analysis) The expediency of using these methods and techniques during research work was emphasized by A.V. Haritonov, notes that economic sciences, when studying agriculture as a branch of social production, use the following research methods: statistical-economic, monographic, experimental, computational-constructive, abstract-logical and mathematical [16].

The creation and development of innovations is becoming an increasingly complex area, the management of which requires special knowledge. This trend is explained by the fact that any innovation violates the order of operation of production, its formed technical, technological, organizational and other proportions. The more complex and large-scale
production and the higher the cost of its fixed assets, the greater the risk in mastering innovations. In this regard, among the problems of scientific and technological progress, the problem of evaluating innovations and the results of their implementation, the expediency of their investment, occupies an important place.

3 Results

Following the terminological contradictions in the innovative activities of agricultural enterprises, it is necessary, first of all, to take into account the specifics of the latter, thanks to which material benefits of plant and animal origin are created to provide the population with food, and the processing industry with raw materials. The main features of innovative activity in agro-industrial production, according to A.S. Kazantsev, are:

1) a variety of agricultural products and products of its processing, a significant difference in their production technologies;
2) significant differentiation of individual regions of the country according to agrotechnological production conditions;
3) the dependence of technologies used in agriculture on natural conditions;
4) the dispersion of agricultural production over a large area;
5) there is a big difference in the production periods of certain types of agricultural products;
6) isolation of agricultural producers from scientific institutions engaged in the production of scientific and technical products;
7) the lack of an organizational and economic mechanism for transferring scientific achievements to agricultural producers [7].

V.D. Korotnev's research [4] identifies five features of the innovation process in agriculture:

- long process of innovation development;
- innovations are, as a rule, of an improved nature;
- research of living organisms;
- the leading role of research institutions;
- dependence on the natural area and climate [8].

In many ways, these features determine the modern definitions of "agro-innovations" that are found in domestic and foreign economic literature (Table 1).

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<th>Table 1. Disclosure of the essence of the concept of &quot;innovations in the agro-industrial complex&quot; in the works of domestic and foreign scientists</th>
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B.I. Shaitan

"New technologies, new equipment, new plant varieties, new animal breeds, new fertilizers and products plant and animal protection, new methods of animal prevention and treatment, new forms organization, financing and lending of production, new approaches to training, retraining and advanced training of personnel, etc."[17]

R. A. Fatkhutdinov

"The final result of introducing an innovation in the field of agriculture (plant varieties, animal breeds, plant or animal protection products, cultivation technologies, etc.), which it has led to economic, social, environmental and other types of effects" [15]

Thus, the definitions of innovation proposed by the researchers make it possible to define it as a change that is made by a business entity in its own activities in order to increase competitiveness in the market and meet public needs.

According to D.D. Buravtsov and A.A. Kurochkin, in agro-industrial production, the concept of "innovation" is proposed in three aspects: as a special stage in the movement of scientific and technical products into production; as a special form of activity linking science with production; as one of the sides of production (producer and consumer) [5].

We agree with the opinion of A. I. Trubilin, who notes that the innovative path of development of agro-industrial production has three interrelated and interdependent directions:

- innovations in the field of the human factor - training of specialists of mass professions who are able to operate new machinery and equipment, apply high-tech technologies, improve their skills and retraining;
- innovations in the field of biological factor - the development and development of innovations that ensure an increase in the fertility of agricultural land, an increase in crop yields and the productivity of farm animals;
- innovations in the field of technogenic factor - ensure the improvement of the technical and technological potential of agro-industrial production based on energy- and resource-saving equipment and high-tech technologies. [14].

4 Discussion

The term "innovation" is a word of Latin origin, meaning renewal, change; from the English. Innovation - innovation, innovation; innovator – innovator, innovator. The concept of "innovation" first appeared in the works of cultural scientists back in the 19th century and meant borrowing certain elements of one culture from another. In the first half of the twentieth century, the founder of evolutionary economic theory, Joseph Alois Schumpeter, filled this term with economic content, arguing that economic development, the development of enterprises is possible and advisable only on the basis of innovations.

The great practitioner Henry Ford held a similar opinion, he noted that "businessmen go down with their business because they are so in love with the old order that they cannot bring themselves to change them" [12].

I. A. Schumpeter believed that the form and content of development are set by the concept of "manifestations of new combinations", which he revealed in his work "Theory of Economic Development" (1911) [18]. In the 30s, the scientist used the term "innovation" instead of the term "new combinations", meaning changes in order to introduce and use: new types of consumer goods, new production methods, new sales markets, new types of raw materials or semi-finished products, new organizational forms of production. It is impossible not to agree that all five of Schumpeter's "new combinations" today set the form and content of the economic development of enterprises in any industry.

The economic categories "innovation" and "innovation process" harmoniously echo the theory of "long waves" by M. D. Kondratiev. As a result of analyzing statistical data on the
economic indicators of England, France, the USA and Germany in dynamics (namely prices, prices as a percentage of capital, wages, foreign trade volume and production of basic industrial products), M. D. Kondratiev revealed the presence of cyclical waves lasting 48-55 years ("long waves"). He discovered empirical patterns accompanying long-term fluctuations in the economic environment. M. D. Kondratiev believed that the rise of the wave of each large cycle is preceded by major changes in the economic life of society, which are based on significant changes in technology (due to the introduction of new scientific discoveries and inventions). He assigned the main role to scientific and technical innovations and found that innovations are unevenly distributed over time, dividing groups or clusters that contribute to the recovery of the economy [3].

Kondratiev's theory of "long waves" was not unambiguously accepted by economists, some of its provisions were denied by D. I. Oparin and young scientists who were part of the "circle of conjuncturist schematics" (1925). However, Kondratiev's "long waves" corresponded well with the innovative theory of J. Schumpeter, who assumed the possibility of overcoming crises and depressions in production through innovative capital renewal. D. I. Kokurin also notes in his writings that the maximum of innovative activity falls during the period of crisis, low profits, when there is an exhaustion of the potential of the technological structure. He also suggests that the general deterioration of the economic situation is accompanied by active re-equipment of production, high innovative activity of economic agents.

Scientists interpret and classify innovations depending on the topic, object and subject of their research. Yes, H. Rigs gives such a simple but succinct definition: "innovation is the commercial development of a new idea". Nelson and Winter define "innovation" as a change in routine. The viability of an innovation, in their opinion, depends on how consumers evaluate it.

M. Porter's definition is relevant and up-to-date: "innovation is an opportunity to gain competitive advantages" [10].

A modern domestic scientist, B. I. Shaitan, notes that innovations in agriculture are new technologies, new equipment, new plant varieties, new animal breeds, new fertilizers and plant and animal protection products, new methods of prevention and treatment of animals, new forms of organization, financing and crediting of production, new approaches to training, retraining and advanced training of personnel, etc. [17].

According to A.M. Mukhamedyarov, "innovation is the introduction into economic practice of the results of innovative processes", economists N.V. Gorodnikova, S.Y. Gosteva understand innovation as a complex process involving the creation, development and bringing scientific or any other new idea to the stage of commercial use and dissemination in the economy. In the economic encyclopedia "innovations-innovations in the field of engineering, technology, labor organization and management based on the use of scientific achievements and best practices, as well as the use of these innovations in a variety of fields and fields of activity" [11].

The typologies of innovations by L. Gokhberg, I. Kuznetsova, A. Prigozhin, M. Khucek, P. Zavlin, have become widespread.

Innovations are classified according to different criteria, highlighting several types of innovations in each qualification niche (Fig. 1).
We share the point of view of scientists who consider it unlawful to identify the concepts of "innovation" and "innovation", since the emergence and spread of innovations is preceded by the process of creating innovations (innovations).

Russian economist Fatkhutdinov R. A. argues that innovation is the formalized result of fundamental, applied research, development or experimental work in any field of activity in the field of efficiency improvement [4].

The development of innovations in the agricultural sector of Russia is carried out by a network of research institutes of the Academy of Sciences of the Russian Federation and the Ministry of Agriculture of the Russian Federation. Agricultural innovations are: new plant varieties, new animal breeds, strains of microorganisms, chemical and biological preparations (vaccines), new types of agricultural machinery, technologies, economic developments, officially registered methods, recommendations, assessments, etc. The stage of innovation creation is characterized by duration, significant financial and intellectual investments. At the next stage of the innovation process, the results are tested and verified. During the testing, the best samples are selected, or those that correspond to the specified properties. The selected samples are defined as innovations. After being introduced into production and achieving the set goal, innovations become innovations, and remain them until the time when they become commonplace [9].

In the agro-industrial complex, innovations are the process of introducing innovations into economic practice, including new plant varieties, breeds (species) of animals and birds,
a resource and raw material base, new technologies in crop production, animal husbandry and processing industry, new methods of prevention and treatment of animals and poultry, forms of organization and management of various sectors of the economy in order to transformation of the management object and obtaining a greater positive effect (economic, social, environmental, synergetic). Innovative development, in turn, represents the transition of an object from an old to a new qualitative state caused by the spread of innovations.

The innovative development of agricultural enterprises is based on innovative activities. American economist Peter Drucker noted that entrepreneurs are distinguished by an innovative type of thinking, and innovative activity is a special tool of entrepreneurship. The need to intensify the innovative activities of agricultural enterprises is due to the following factors:
- strengthening the role of intensive factors in the development of agricultural production, which contribute to the creation and application of scientific and technical developments;
- the desire to accelerate the processes;
- the need to reduce resource costs and improve the economic performance of agricultural enterprises;
- physical and moral aging of machinery and technology;
- globalization of agricultural markets, and as a result, increased pressure from competitors and market demand.

5 Conclusion

The innovative development of enterprises in the agricultural sector is a change in the state of the management system caused by a radical transformation of its subsystems and internal elements in order to achieve a synergistic effect of the interaction of its economic, social and environmental components. In the system of innovative development, we identify four subsystems and a significant number of interrelated infrastructure elements.

The status of Russia as an industrial state with a significant share of the agricultural sector theoretically provides an opportunity for the integrated development of the innovation process in the agricultural sector, since the successful development of agricultural innovations is largely determined by the level of development and the introduction of scientific achievements of scientific and technological progress in various sectors of industrial production: machine-building, microbiological, chemical, etc.

However, the agricultural sector currently remains the most unfavorable to innovations compared to other sectors of the economy. One of the key factors of the conservatism of the agricultural sector is the severe limitation of financial resources.

Investment support for innovation in the agricultural sector, as evidenced by world experience, is impossible without government funding for scientific and technical work. The specifics of creating an innovative product in the agricultural sector require stable budgetary financial support for research and development.

Undoubtedly, each individual enterprise in the agricultural sector faces clearly defined individual tasks and goals of innovative development, which come out of the state of production and economic activity of the enterprise in the appropriate period of time.

For example, in some enterprises, innovations in the use of new types of resource and raw material base (feeding rations, genetic material) may be a priority. At other enterprises, the introduction of a new production line with unchanged raw materials is relevant. The option of using an innovation system by enterprises is also not excluded, which, for example, may consist in a relatively simultaneous change in the technological production and raw material base and product sales markets.
Thus, enterprises face the task of choosing the most rational options for innovative development, such as those that could be implemented with available or potentially possible production and financial resources.

Based on this, the methodological and methodological basis of this study is a comprehensive, systematic approach to the problems of development and implementation of innovations at enterprises, which allows us to identify the influence of various factors, under certain conditions, on the final results of production and economic activity, as well as to determine the causal relationship between the introduction of innovations by enterprises of the agricultural sector in the agricultural sector the market.

References

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