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Factors And Directions Of Innovative Development The Dairy Products Subcomplex Of The Agro-Industrial Complex.

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ABSTRACT

In the conditions of financial instability and stagnation of market processes, the problem of ensuring food security is becoming one of the strategic objectives of the sustainable development of the country's economy. The dairy complex plays a significant role in this. Weak innovation activity, loss of competitiveness of business structures pushed Russia aside for the last months of Europe in terms of cow productivity. The work identifies the factors of innovative development of agricultural production, identifies the areas of innovation and the direction of its implementation in the dairy subcomplex of the agro-industrial complex. The strategy of innovative development of the dairy products subcomplex of the agro-industrial complex in the regional system is proposed.

Keywords: factors, innovative development, agro-industrial complex.

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INTRODUCTION

The agro-industrial complex is one of the basic structure-forming subsystems in a single system of the national economy. It is a set of industries related to the development of agriculture, the maintenance of its production and bringing agricultural products to the consumer. One of the largest food subcomplexes of the country in terms of the volume of production of marketable products, the number of employed workers, the use of production assets, capital investments and raw materials is a dairy product subcomplex. In the total volume of the final production of the food complex of Russia, its share is about 21%, and in the structure of the total number of workers in the food industry - 22% [1]. Its formation is the result of the social division of labor, the deepening of specialization and concentration of production [2, 4]. The socio-economic importance of the dairy subcomplex is determined by the high value of its final products in the structure of nutrition of the population [3]. Having examined and analyzed the economic essence, the role, and place of the dairy product subcomplex in the system of the agro-industrial complex, it can be concluded that the dairy product subcomplex is one of the largest structural elements of the agro-industrial complex.

MATERIALS AND METHODS

The main indicators used to calculate the effectiveness of innovative projects are recommended:

- net income;
- net present value;
- internal rate of return;
- the need for additional funding (other names - project cost, risk capital);
- profitability indexes of costs and investments;
- payback period;
- a group of indicators characterizing the financial condition enterprises - participants of the project.

Any innovative project should be considered from the point of view of its expediency. It is obvious that the investor will allocate the necessary funds only if he is fully confident in the positive result of the proposed event. Otherwise, he will invest in a more profitable project.

The economic feasibility of an innovative project can be expressed in the following categories:

- the effectiveness of the project characterizes the extent to which the project is beneficial for its every participant;
- financial feasibility determines the required amount of funds for the project and shows acceptable ways to obtain them;
- an acceptable level of risk characterizes the likelihood of adverse conditions that prevent or impede the implementation of the project.

In our opinion, the most complete and systematic methodology for evaluating the effectiveness of innovative investment projects is presented in the works of M.I. Rimera, A.D. Kasatonova, N.N. Matvienko [4, 5], G.S. Staroverova, A.Yu. Medvedeva, I.V. Sorokina [6], N.V. Kiseleva, T.V. Borovikova, G.V. Zakharova [7]. They recommend evaluating the effectiveness of investments using a system of interrelated indicators divided into two groups: simple (static) and dynamic (discounting methods).

It should be noted that all indicators are in systemic unity, they have a single information base, and they must be balanced. This is a prerequisite to the quality level of the developed innovative project.

To assess the achievement of strategic goals and the implementation of strategic objectives set for the sub-sectors of the dairy subcomplex of the agro-industrial complex, it is advisable to use a system of performance indicators, which includes: integrated indicators, as well as indicators of the level and effectiveness of innovative development.

As complex authors suggest using integral indicators of the development of dairy cattle breeding and the milk processing industry. In addition, the following indicators should be used:

- The index of consumption of milk and dairy products by the population of Russia (in terms of milk);
- raw milk production index;
- commodity index, i.e. the amount of raw milk received for processing;
- indices of dairy products, including cheese, as the most technologically complex dairy product.

As indicators of innovation development, it is advisable to use indicators used in world practice that characterize the innovative focus of development programs in the following areas: financing and R & D performance; technological leadership; innovation performance; the effectiveness of the innovation management system; efficiency of interaction with external sources of development and innovation.

Technological leadership indicators are measured by the number of patents obtained in the last 3 years; the number of products protected by patents; balance between breakthrough and improvement projects.

The indicators of the effectiveness of innovation should include the percentage of sales of new products in total sales and the indicator of the effectiveness of implementation, i.e. the ratio of sales of products produced using the results of research and development to the value of their implementation.

The performance indicators of the corporate innovation management system are characterized by: the number of own innovation projects and the duration of the innovation process cycle or its individual stages.

This system of indicators will allow, taking into account some specific features of the branches of the dairy product subcomplex, to evaluate the intermediate and final effectiveness of the implementation of the strategy.

RESULTS AND DISCUSSION

An analysis of the world milk market over the past 40 years shows a steady trend towards an increase in its production in almost all major producers (table 1), except for Russia and Ukraine. The championship here belongs to the countries of the EU-27, India and the United States. In the European Union countries, an increase in raw milk production is observed in northern Europe. The highest growth rates are demonstrated by Germany, Holland, and France. At the same time, the countries of Southern Europe - Spain, Portugal, Romania, and Bulgaria - show a reverse trend.

Table 1: World milk production, million tons

Country	Year								% 2012 to 1990
	1980	1990	2000	2005	2010	2011	2012	2015	
EU-28	-	-	132,0	134,7	139,5	142,2	144,1	179	109,2
India	32,1	53,5	79,3	91,5	117,0	121,5	127,0	207	237,4
USA	58,3	67,0	75,9	80,3	87,5	88,6	91,0	107	135,8
China	1,4	4,8	9,2	28,6	30,5	32,0	33,7	49	702,1
Russia	-	55,7	31,9	32,0	31,8	31,7	32,1	31	57,6
Brazil	10,3	14,5	22,1	24,3	29,9	30,6	31,3	39	215,9
N. Zealand	6,8	7,7	12,2	14,5	17,2	19,0	19,9	26	258,4
Argentina	5,3	6,4	9,8	9,5	10,6	12,0	12,8	13	200,0
Mexico	11,1	6,5	9,7	10,3	11,2	10,9	11,0	12	169,2
Ukraine	-	24,4	12,7	13,7	11,2	11,1	10,9	12	44,7

¹In relation to the 2000.

The greatest progress in comparison with 1990 was achieved by China, which by 2012 increased milk production by 7 times, and also by India, Brazil, and New Zealand - by more than 2 times.

The leader in milk production in the Russian Federation is the Volga Federal District. In 2012, 10.3 million tons or 32.5% of all-Russian milk was produced here (Figure 3.2); in Siberia and Central - 5.7 million tons each. Practically all federal districts in 2011 reduced the volume of milk production in comparison with 1990. An increase (by 4.3%) was observed only in the North Caucasian Federal District.

From 2005 to 2016, milk production in agricultural enterprises increased by 1 million tons or 8%, in farms - by 1.2 million tons or more than 2 times.

In 2018, a further increase in the production of raw milk in these categories of farms is expected to be at least 3.5%.

The Russian farmers face the task of increasing production to fully meet the country's needs with domestic milk.

Successful innovative directional development of the dairy product subcomplex is possible only with synchronization and close interaction of technical, technological and organizational and economic spheres. The latter allows minimizing the costs of developing and introducing innovations, promptly responding to negative changes in the production activities of enterprises, reducing costs in the production of high-tech products, increasing management efficiency, i.e. contribute to the technical and technological modernization of production and coordinate the size and direction of the vector of innovation and investment activities.

The strategy should serve as the basis for creating prerequisites for combining the efforts of the state and private business aimed at providing the population of the Russian Federation with dairy food of the required quality in the required quantity.

The strategy of innovative development of the dairy products subcomplex of the agro-industrial complex should be aimed at creating prerequisites for qualitatively new innovative changes in the subsectors of the subcomplex, which, ultimately, will lead to the renewal of their technical and technological potential, and create prerequisites for further economic growth.

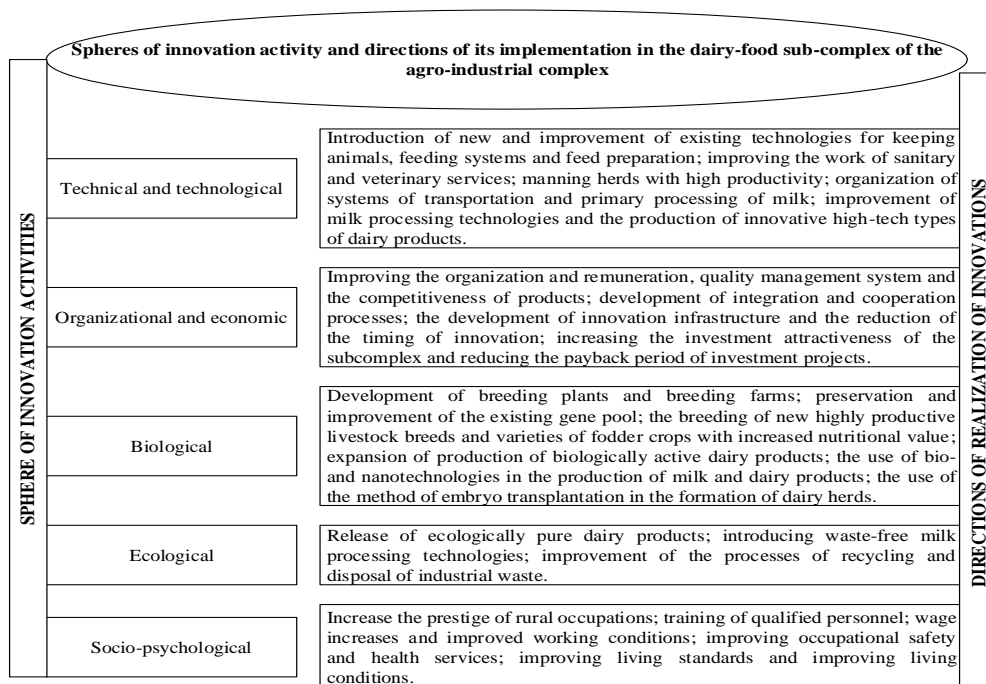


Figure 1: Spheres of innovation activity and directions of its implementation in the dairy product subcomplex of the agro-industrial complex

When developing a strategy, it is necessary to use legislative and regulatory acts that determine state policy in the dairy product subcomplex for a long and short term.

The main goal of the innovative development strategy of the dairy subcomplex of the APC RF is to provide the population of the Russian Federation with safe dairy products in sizes and assortments appropriate to a healthy lifestyle.

The current level of profitability of agricultural producers of milk and the majority of milk processing plants does not allow for timely innovative technological modernization of their production base at the expense of their own investment funds. In the near future, in connection with Russia's accession to the WTO, the incomes of dairy products enterprises of the subcomplex will still decrease. The state will no longer be able to provide the necessary level of financial support and therefore more active attraction of private capital will be required. It is necessary to develop and implement a set of measures to increase the investment attractiveness of enterprises of the subcomplex and attract private investors. Moreover, these measures should be taken immediately, precisely during the transition period, when adopting WTO rules and tightening competition with foreign manufacturers in order to carry out restructuring in time and to prevent a drop in production volumes.

The strategy of innovative development of the dairy grocery subcomplex	
The main objective	Providing the Russian population with safe dairy products in volumes, quality, and assortment appropriate to a healthy lifestyle.
Goals	Increasing the competitiveness of dairy subcomplex organizations in the domestic and foreign markets as part of Russia's accession to the WTO; increasing the financial sustainability of dairy subcomplex organizations and ensuring profitability sufficient for maintaining expanded reproduction; increasing the investment attractiveness of the sub-sectors of the dairy subcomplex for domestic and foreign investors; sustainable rural development.
Tasks	Ensuring compliance with the indicators of the Doctrine in the field of milk and dairy products; increase in consumption of high-quality dairy products by the population; protection of the domestic market from counterfeit and falsification; the formation of an innovation system and innovation infrastructure; stimulation of innovation activity and innovative development of the dairy product subcomplex; innovative development and increasing the efficiency of milk and dairy products; comprehensive technical and technological modernization of production; protection of the domestic market from unfair competition; output of products to the world market; ensuring the environmental safety of the production of milk and dairy products; improving the quality of life of the rural population.
Trend	The attraction of external investment resources; creation of innovation infrastructure; accelerating the commercialization of innovations; increasing the level of innovation culture; monitoring and evaluation of the implementation of the innovation strategy.
Principles	State support, fiscal stability, priority of innovation development, strategic investment, market methods of state regulation, stability of the legislative base, focus on world experience, a systematic and integrated approach, science, application of program-targeted methods of strategic planning, optimization of production processes, methodological support and use the experience of other industries, the integration of educational, scientific and production processes, integration into the world economy-hand.
Factors	Globalization of the world economy and Russia's accession to the WTO; scientific and technical progress, information accessibility, limited investment resources, and low efficiency of sub-sectors, environmental, social and human factors.
Functions	Reproductive, investment, coordinating, information controlling, stimulating, social, ecological.
Mechanisms	Improving state support for innovation; the formation of an innovation system; organization of innovation clusters and pilot enterprises; creation of specialized centers for the transfer and implementation of innovations; stimulation of innovation activities in universities; improvement of the vocational education system.
Instruments	Incentive credit, fiscal, and depreciation policies; the system of economic benefits to the subjects of innovation and investors; support for the production of innovations and regulation of relations in the markets of investment goods.
Indicators	Integrated; funding and R & D performance; technological leadership; innovation performance; the effectiveness of the innovation management system; efficiency of interaction with external sources of development and innovation.

Figure 2: Strategy for the innovative development of the dairy grocery subcomplex of the Russian agro-industrial complex

The achievement of the goals is based on an integrated and innovative approach to the development of the dairy product subcomplex of the agro-industrial complex and provides for the solution of the following main tasks: ensuring the fulfillment of the Doctrine indicators in the field of milk and dairy products, because At present, the subcomplex does not fully fulfill its function of meeting the needs of the population in dairy products, as a result of which the share of imports exceeds the internationally recognized level of maintenance of the country's economic security. Almost all Russian regions do not cope with the task of providing

themselves with dairy products. Residents of the Astrakhan region, for example, in 2016 received only 18% of domestic products, the Stavropol Territory - 19%, the Kursk Region - 26%, the Orenburg Region - 20%. The best indicators in the Vladimir region - 90% of milk consumed there, domestic production. In the Leningrad region, the share of own dairy products was 80%, etc.

A schematic plan of the strategy for the innovative development of the dairy subcomplex of the Russian agro-industrial complex is presented in Figure 2.

The implementation of the strategy will occur under the influence of external and internal factors. The author proposes the following as the main and determining ones: globalization of the world economy and Russia's accession to the WTO; scientific and technical progress; information availability; limited investment resources; environmental factors; social and human factors. The limited investment resources and the low efficiency of the enterprises of the dairy product subcomplex adversely affect their innovative activity.

For the main expected results of the implementation of the strategy of innovative development of the dairy complex of the agro-industrial complex, take the figures laid down in the State program "Development of agriculture and regulation of agricultural products, raw materials and food for 2013-2020", which provides for the achievement by 2020 of the following indicators: households of all categories - 38.2 million tons; milk marketability in all categories of farms - 64%; production of cheese and cheese products - 546 thousand tons; the share of domestic dairy products in the total volume of their resources (in terms of milk) is 90.2%.

CONCLUSION

The implementation of the proposed strategy will allow making an innovative modernization of the dairy subcomplex of the agro-industrial complex and putting its sub-sectors on the path of high-tech and high-tech innovation development, ensuring the environmental safety of production and developed social infrastructure in rural areas, which will contribute to solving the tasks set in the dairy population products of domestic production.

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