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DEVELOPMENT OF THE AGRO-INDUSTRIAL COMPLEX OF RUSSIA AT THE PRESENT STAGE

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Abstract

The article shows the development of agriculture in Russia at the present stage. It is agriculture that today is steadily one of the fastest growing sectors of the Russian economy. The production of certain products has been demonstrating historical records for a number of years, which has allowed Russia to become a prominent supplier to world markets. The growth of the agricultural sector has been facilitated by both natural factors (geographical location, large areas of agricultural land, vast water resources), investment inflows and improved management. The introduction of sanctions and government measures aimed at import substitution also contributed to the development of agricultural production in the country. This trend coincided with a significant increase in demand for basic foodstuffs due to population growth, primarily urban population growth, climate change, etc. It should be noted that the growth in demand contributes to the growth of long-term risks of instability in the world markets.

Keywords: history, agriculture, country, collective farm, land, culture.

I. INTRODUCTION

In the current realities, despite the foreign policy sanctions pressure, Russia continues to increase the production capacity of the agro-industrial complex. According to the estimates of the Ministry of Agriculture of Russia, in 2022 the planned values of self-sufficiency level provided for by the project "Development of Agroindustrial Complex Sectors" will be reached or exceeded for grain - 177.8%, sugar - 103.2%, vegetable oil - 211.1%, meat and meat products - 100.9%, fish and fish products - 153.3%. Own sustainable grain production is an important factor of the country's food security. According to Rosstat, in 2022 a record gross grain harvest was obtained - 157.7 million tons in weight after tillage, which is 29.9% higher than the 2021 harvest (121.4 million tons). For the first time in Russia's history, a record 104.2 million tons of wheat was harvested, which is 37.1% more than in 2021 (76.1 million tons). Approved in September 2022, the "Strategy for the development of the agro-industrial and fishery complexes of the Russian Federation for the period until 2030" is aimed at ensuring long-term and prospective development of the country's agro-industrial complex.



The key guidelines for the development of the agro-industrial complex are: import substitution; development of the food and processing industry, including the introduction of innovations; digitalization of industries and sub-branches; preservation, restoration and improvement of the fertility of agricultural land, its rational use, involvement of unused arable land in agricultural turnover; breeding and genetics; development of land reclamation complex; introduction of new types of services, services and solutions to optimize production and logistical processes in the agricultural sector. The development of the agro-industrial complex is associated with foreign policy, economic, technological, veterinary, phytosanitary risks, as well as climatic and agro-ecological threats.

II. DISCUSSION AND RESULTS

Today, the integral indicator of the state of farming and crop production is gross yields of major crops. Consideration of six main positions (from 1990 to 2020), revealed multidirectional dynamics.

For cereals and legumes, sugar beet and sunflower seeds it is a downward trend to the level of 1998-1999. The reason is that these crops were strongly affected by the difficulties of the transition period, reduction of the area under crops and drought conditions of recent years in the main agrarian regions of Russia. Nevertheless, starting from 2000 an upward trend can be identified with fluctuations by years due to market conditions and agrometeorological conditions. During this period, the area under crops has basically stabilized. As a result, over the past 30 years, the share of wheat in the total cropping pattern increased from 20% to 37%, and in the crops of cereals and grain legumes - from 37% to 60%. This was due, among other things, to the fact that until 2021 the grain complex was focused on free export of products, which allowed to maintain the profitability of the industry. At the same time, for rye, a steady trend towards a decrease in gross yields was revealed - by 6-10 times compared to 1990.

In 2001-2005, gross grain yields averaged 79 million tons per year with an area of 44.8 million hectares, and yields averaged 17.6 c/ha. (These yields were obtained by calculating the ratio of gross harvest of grain and leguminous crops in weight after tillage to the area under crops). In 2016-2020, these indicators, respectively, were 124.7 million tons; 47.1 million hectares; 26.5 c/ha, an increase of 60%.

For outdoor and indoor vegetables, we can talk about a steady upward trend with clear failures in the extremely dry years of 1999 and 2010.

Potato production - Russia's "second bread" - grew to 40 million tons by 1995 due to the activity of private farms and agribusiness, but then steadily declined until 2020, when only 19.6 million tons were harvested in all categories of farms. Significant deviations from the trend were also noted in the above-mentioned unfavorable years in terms of hydrothermal conditions.

Production of fodder, namely root fodder crops, including sugar beet for livestock fodder, fodder from annual and perennial grasses (green fodder, haylage, hay) fell in total 4 times from 234 million tons to 62 million tons.

Now there are 35 million conventional cattle in the country (for comparison, in 1990 there were 76 million heads). The number of cattle since the same 1990 has fallen from 57 million heads (21 million cows) to 18 million heads (8 million cows). While in 1990 55.7 million tons of milk were produced, in 2000 it was 32.3 million tons and in 2020 it will be 32.2 million tons. Accordingly, cattle meat was produced 4.3; 1.9 and 1.6 million tons. However, it should be noted that over the past 20 years, milk yield per cow has increased by 1.5 times.

From 2021, tariff and non-tariff regulation on grain and a number of other commodity items has been introduced for an indefinite period of time. A set of measures has been taken to curb the growth of domestic prices for the most important types of food. But any ban for the market is a harbinger of deficit.

After all, the increase in duties does not solve the main problem - the objective increase in the cost of production of agricultural products in the Russian Federation and does not give the opportunity to stay away from global trends caused by the fight against pandemic and quantitative easing measures.



The Russian government is forced to plan the creation of a system to protect the domestic market from rising world prices for entire groups of goods: food products (sugar, sunflower oil, grain, poultry meat, pork, milk, fish), ferrous and non-ferrous metals, and fertilizers. The defense system will consist of two parts. The first is a model of regular forecasting of the cost of goods on world markets and its impact on the national market for a period of eight weeks (in other words, the availability of these goods to their consumers will be analyzed). The second part involves using these estimates to prevent domestic price spikes according to a certain regulation. The set of techniques includes duties, dampers, export restrictions, production subsidies, expansion (changes) of crop areas, etc.

What do we see? Over the past 20 years, the numerical value of the index of production of multi-structure agriculture in our country for all categories of farms in comparable prices as a percentage of the previous year reflects a very uneven dynamics of the industry. It fluctuated from plus 22.3% in 2011 after the previous failure to minus 12.1% in 2010 during the drought. In the crisis year 2020, the index added 2%. The inertia of agro-production processes and the long cycle have always shown themselves. If after the highest gross grain harvest in the history of the Russian Federation in 2017, the index expectedly showed plus 2.9%, in prosperous 2018 it expectedly fell to minus 0.2%. The reason is that the high harvest dropped grain prices on the domestic market and deprived farmers of working capital for the next sowing season, and the adequate response of managers was late as always.

The peculiarity of the current stage of development of the domestic agro-industrial complex is the fact that harvests and production of products on the main items are growing (or at least not decreasing). So, as one might assume, supply is also increasing, and retail prices are decreasing?

It is not so. Food in Russia is becoming more expensive significantly ahead of the official inflation rate. In November this year compared to November 2020, flour was more expensive by 13%, pork and beef (except boneless meat), as well as vermicelli - by 15-16%, onions - by 22%, buckwheat groats - by 25%, chicken eggs - by 26%, chickens - by 30%, carrots - by 38%, table beets - by 1.5 times, potatoes - by 1.7 times, white cabbage - by 2 times.

And for comparison: during the same period oranges became cheaper by 3%, lemons went up in price by 5%, bananas became more expensive by 11%.

According to Rosstat data as of December 6, the growth of food prices in the Russian Federation is holding at 10.6% year-on-year. Over the past 12 months, chicken rose in price by 30%, beef and pork - by 15%. Buckwheat became more expensive by 23%, chicken eggs - by 24%, vermicelli - by 14%. Bread and flour rose in price by 10% and 13%, respectively. Potatoes became more expensive by 67%, cabbage - by 115%, carrots - by 37%. Cucumbers went up in price by 21%. Russian President Vladimir Putin at a meeting on economic issues on Tuesday, December 7 this year, called the price rise as the number one threat:

"The main problem today both for the economy and for citizens is the growth of inflation. At the end of November it amounted to 8.4%. In 2024, it is necessary to ensure the return of inflation to the target level of 4%."

"I ask you to focus on increasing the supply of goods and services in the domestic market, primarily food products," the president said. It is hard to disagree with this. In developed countries, the agro-industrial complex accounts for a significant part of employees, fixed and working capital, APK. It is the scale of the agro-industrial complex, its structure and efficiency of functioning that largely determine the improvement of living standards of the population and food security[14]. At the same time, there is a tendency that the development of the service sector leads to a decrease in the percentage of the influence of APK in the economy of developed countries, while developing countries have a high figure of 40 to 50%. Also, the increasing participation of agribusiness in GDP leads to the fact that small farms, representing 72% of all farms, occupy only 8% of the total agricultural land. Large farms owned by food corporations, which account for only 1% of farms globally, occupy 65% of farmland. This gives large farms almost complete control in the sphere, lack of incentives for technology development, which entails a decrease in the quality of produced and delivered products.



The development of agribusiness makes a major contribution to the development of one of the Sustainable Development Goals - the eradication of hunger as a phenomenon - and some successes have been achieved in this direction: in the first 15 years of the 21st century, globally, the proportion of people suffering from malnutrition decreased from 15% in 2000-2002 to 11% in 2014-2016. If this trend continues, the goal of eradicating hunger will largely be achieved by 2030. However, at the same time, environmentalists note the negative impact of the active development of agribusiness on the environment. By-products of agribusiness are a significant source of greenhouse gases, pollution of soil and water bodies, deforestation, reduction of wildlife population. And also leads to the transmission of new viruses between wild animals, domesticated animals and humans. Active use of pesticides in a number of agro-industrial sectors is recognized by the World Health Organization as a cause of real harm to consumer health.

In the global context, the approach to the functioning of the agro-industrial complex is distinguished by the strong connection of this research with the UN program "Sustainable Development Goals" and the study of the possibilities of interaction of the agro-industrial complex with nuclear energy, as well as with alternative forms of energy. The creation of a successfully functioning agro-industrial complex is a large-scale task and involves the application of various branches of science. In this context, industrial processes are defined with two main objectives in mind: stimulating agricultural production through intensive use of fertilizers and developing the country's economy by meeting domestic demand for products and creating the necessary base for exports. The research interest was motivated by the need to form and maintain agribusiness in an environment not suitable for cheap and convenient utilization of natural resources or types of energy[12].

In 1967, Oak Ridge National Laboratory, in collaboration with a number of individuals and organizations, initiated a study that presented a new fundamental idea of combining industrial complexes with highly sustainable agriculture based on reduced freshwater consumption. For the first time, agro-industrial complexes were analyzed thoroughly and systematically. Energy sources can be hydroelectricity, gas, coal or oil. Generally, the establishment of an agro-industrial complex is not possible far from a source of energy or water, it severely limits the ability to access food to arid or mountainous areas, for example. AICs of this kind (erected have contributed significantly to the development of the so-called industrialized countries. Hydroelectric or fossil fuel power plants must be built near their energy sources, which are not always favorable places to erect complexes. Nuclear power, on the other hand, is not limited by these conditions. It has been suggested that countries that lack fossil fuels and wish to develop heavy industry and agro-industrial complexes could follow the path of nuclear power. The concept of a nuclear energy center involves combining a low-cost energy source with industries that require large amounts of energy, whether in the form of electricity or steam. Energy costs, among other things, have a significant impact on the economics of chemical production[12].

In 1972, the International Atomic Energy Agency published a proposal on the possibilities of integrating the AIC with nuclear power sources, based on its own research and experience in implementing similar projects in India and Puerto Rico. A dual-purpose nuclear power plant becomes the center of the envisioned industrial sector. It was assumed that the excess capacity could be absorbed by the existing utility grid and that the excess water could be used for agriculture. In addition, some of the effluent from the brine is used to produce sea salt and bromine. Brine electrolysis is mainly used to produce hydrochloric acid and caustic soda to treat raw seawater prior to desalination, which significantly reduces freshwater inputs for agricultural use. Nitrogen and phosphate complex fertilizers were assumed to be used for the needs of the agro-industrial complex itself and for sale to other agricultural centers of the country that operate at the expense of other energy sources. Special attention was paid to the impact of costs for desalinated water and electricity on the cost of industrial and agricultural products. Moreover, by-products that are often disposed of as waste can also be used (wastewater, chemical fertilizers). Surplus electricity can be transferred to the grid[12].

The objective of the study was to prove that the creation of a complex of industries around a nuclear power source would favor the economics of large-scale nuclear power plants. The industries selected to form part of an industrial or agro-industrial complex will benefit from the low cost of electricity, but at the same time they will be favored by many other factors. An undoubted advantage of industrial complexes is that the products of one plant can be used as raw materials for the primary or secondary processes of other plants represented in the complex.



For general purposes of the study, the peculiarities of cultivation of ten crops were considered with an error on the peculiarities of the regions. The water consumption rate given in the study showed that the efficiency of irrigation reduction under such an approach is 80% and yields would increase by 20% in some regions. It was concluded that arid tropical and subtropical regions with climates suitable for growing agricultural products throughout the year are theoretically capable of growing food at or close to import prices on the world market, given the availability of desalinated water produced through the use of nuclear energy[12].

At the same time, it was noted in the study that such an approach also causes a number of problems in the implementation of agro-industrial complex tied to nuclear energy. This is especially true if the complex is built in a remote and undeveloped area. Long-term advance planning is required. A study team consisting of a team of highly qualified and experienced engineers as project architects, working closely with local technical and financial teams, would have to scrutinize all aspects of the economic basis, planning and implementation of the project. A large number of people would have to move to the area, thus requiring special attention to infrastructure and landscaping.

Facilities such as housing, roads, transportation services, water supply, sewerage, electricity, hospitals and health services, schools, and educational programs[12] should be provided long before the AIC is erected.

III. CONCLUSION

The problems of sustainable development of the agricultural sector are obvious. Non-market factors have a significant impact on it. If intensification is understood as a higher output per unit of utilized area of agricultural land and reduction of resource intensity of its production (including the so-called "carbon footprint"), then it is necessary to systematically assess the contribution of various factors, primarily natural, economic, management improvement in the performance of the agro-industrial complex of Russia. This will make it possible to identify priorities, optimize state support and improve the efficiency of industry management.

REFERENCE LIST

- Alekseev V.V. (2003) Agro-industrial management: A textbook. M.: DeKA . 427 p. (In Russ).
- Bautin V. (2003) To improve innovation activities in the agro-industrial complex. Agro-industrial complex: economics, management. Number 1. Pp. 21-25. (In Russ).
- Denin N. (2003) The effectiveness of agro-industrial integration at the microeconomic level. Agro-industrial complex: economics, management. Number 10. Pp. 44-51. (In Russ).
- Ershov B.A., Chekmenyova T.G. (2022) The atomic race during the Second World War. Bulletin Social-Economic and Humanitarian Research. Number 13 (15). Pp. 78-86. (In Engl).
- Ershov B.A., Nebolsin V.A., Solovieva S.R. (2020) Higher education in technical universities of Russia. 7th International conference on education and social sciences. Abstracts Proceedings. Pp. 55-58. (In Engl).
- Ershov B.A., Perepelitsyn A., Glazkov E., Volkov I., Volkov S. (2019) Church and state in Russia: management issues. 5th International conference on advances in education and social sciences. Abstracts Proceedings, e-publication. Pp. 26-29. (In Engl).
- Ershov B.A., Zhdanova T.A., Kashirsky S.N., Monko T. (2020) Education in the university as an important factor in the socialization of students in Russia. 6th International Conference on Advances in Education. Abstracts Proceedings. Pp. 517-520. (In Engl).
- Klyukach V. A. (2004) Forms and mechanisms of creation of an agro-industrial corporation. Agro-industrial complex: economics, management. Number 2. Pp. 33-44. (In Russ).



Knyagina G.V. (2006) Institutional risks in the agricultural sector, their classification and reduction directions. Scientific works of Donetsk University of Science and Technology. Number 4. Pp. 156-160. (In Russ).

Kurtsev I. (2003) The development of agriculture and the food market of Siberia. Economist. Number 2. Pp. 70-75. (In Russ).

Lyububina I.B. (2003) Domestic agro-food complex: current state and development trends. Finance and credit. Number 1. Pp. 66-72. (In Russ).

Minakov I.A. (2007) Cooperation and agro-industrial integration in the agro-industrial complex. Moscow: KolosS. 264 p. (In Russ).

Ognitvsev S.B. (2004) Problems of the agroindustrial complex of Russia impossible ways to solve them. The economics of agricultural and processing enterprises. Number 7. Pp. 10-13. (In Russ).

Romanikhin A.V. (2003) Lobbying of industry interests: the experience of the agro-industrial complex. ECO: Economics and organization of industrial production. Number 7. Pp. 17-20. (In Russ).

Romanova E.V., Perevozchikova L.S., Ershov B.A. (2017) The Lifestyle of the Human Being in the Information Society. 3rd International Conference on Advances in Education and Social Sciences Proceedings of ADVED. Pp. 950-954. (In Engl).

Savushkin M. (2002) Features of marketing in agricultural enterprises. Marketing. Number 4. Pp. 70-74. (In Russ).

Schumpeter I. (1982) Theory of economic development. M.: Progress. 455 p. (In Russ).

Semenov V. (2003) The agro-industrial complex cannot be stopped like a factory: everything either grows or dies here: Problems of the agro-industrial complex. Man and labor. Number 1. Pp. 22-25. (In Russ).

Stanislavchik N. B. (2003) Foreign direct investment in the real sector of the Russian economy. The Foreign Economic Bulletin. Number 5. Pp. 45-54. (In Russ).

Ushachev I. (2004) The formation of scientific schools in agroeconomical research. The economics of agriculture in Russia. Number 6. Pp.14-15. (In Russ).

Yakovlev A.V. (1997) Regional agricultural system at the present stage of entering the market. Saratov. Publishing house of Saratov State University. 320 p. (In Russ).

Zhiltsov E., Kazakov V. (1994) Prospects for the survival of the social sphere of enterprises. Russian Economic Journal. Number 3. 1. Pp. 50-51. (In Russ).



РАЗВИТИЕ АГРОПРОМЫШЛЕННОГО КОМПЛЕКСА РОССИИ НА СОВРЕМЕННОМ ЭТАПЕ

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Аннотация

В статье показано развитие сельского хозяйства в России на современном этапе. Именно сельское хозяйство сегодня стабильно является одним из самых быстрорастущих секторов российской экономики. Производство отдельных видов продукции уже не первый год демонстрирует исторические рекорды, что позволило России стать заметным поставщиком на мировые рынки. Росту сельскохозяйственного сектора способствовали как природные факторы (географическое положение, большие площади сельскохозяйственных угодий, обширные водные ресурсы), так и приток инвестиций и совершенствование управления. Введение санкций и государственные меры, направленные на импортозамещение, также способствовали развитию сельскохозяйственного производства в стране. Эта тенденция совпала со значительным увеличением спроса на основные продукты питания в связи с ростом населения, в первую очередь городского, изменением климата и т. д. Следует отметить, что рост спроса способствует увеличению долгосрочных рисков нестабильности на мировых рынках.

Ключевые слова: история, сельское хозяйство, страна, колхоз, земля, культура.

СПИСОК ЛИТЕРАТУРЫ

Alekseev V.V. (2003) Agro-industrial management: A textbook. M.: DeKA . 427 p. (In Russ).

Bautin V. (2003) To improve innovation activities in the agro-industrial complex. Agro-industrial complex: economics, management. Number 1. Pp. 21-25. (In Russ).

Denin N. (2003) The effectiveness of agro-industrial integration at the microeconomic level. Agro-industrial complex: economics, management. Number 10. Pp. 44-51. (In Russ).

Ershov B.A., Chekmenyova T.G. (2022) The atomic race during the Second World War. Bulletin Social-Economic and Humanitarian Research. Number 13 (15). Pp. 78-86. (In Engl).

Ershov B.A., Nebolsin V.A., Solovieva S.R. (2020) Higher education in technical universities of Russia. 7th International conference on education and social sciences. Abstracts Proceedings. Pp. 55-58. (In Engl).



Ershov B.A., Perepelitsyn A., Glazkov E., Volkov I., Volkov S. (2019) Church and state in Russia: management issues. 5th International conference on advances in education and social sciences. Abstracts Proceedings, e-publication. Pp. 26-29. (In Engl).

Ershov B.A., Zhdanova T.A., Kashirsky S.N., Monko T. (2020) Education in the university as an important factor in the socialization of students in Russia. 6th International Conference on Advances in Education. Abstracts Proceedings. Pp. 517-520. (In Engl).

Klyukach V. A. (2004) Forms and mechanisms of creation of an agro-industrial corporation. Agro-industrial complex: economics, management. Number 2. Pp. 33-44. (In Russ).

Knyagina G.V. (2006) Institutional risks in the agricultural sector, their classification and reduction directions. Scientific works of Donetsk University of Science and Technology. Number 4. Pp. 156-160. (In Russ).

Kurtsev I. (2003) The development of agriculture and the food market of Siberia. Economist. Number 2. Pp. 70-75. (In Russ).

Lyububina I.B. (2003) Domestic agro-food complex: current state and development trends. Finance and credit. Number 1. Pp. 66-72. (In Russ).

Minakov I.A. (2007) Cooperation and agro-industrial integration in the agro-industrial complex. Moscow: KolosS. 264 p. (In Russ).

Ognitsev S.B. (2004) Problems of the agroindustrial complex of Russia impossible ways to solve them. The economics of agricultural and processing enterprises. Number 7. Pp. 10-13. (In Russ).

Romanikhin A.V. (2003) Lobbying of industry interests: the experience of the agro-industrial complex. ECO: Economics and organization of industrial production. Number 7. Pp. 17-20. (In Russ).

Romanova E.V., Perevozchikova L.S., Ershov B.A. (2017) The Lifestyle of the Human Being in the Information Society. 3rd International Conference on Advances in Education and Social Sciences Proceedings of ADVED. Pp. 950-954. (In Engl).

Savushkin M. (2002) Features of marketing in agricultural enterprises. Marketing. Number 4. Pp. 70-74. (In Russ).

Schumpeter I. (1982) Theory of economic development. M.: Progress. 455 p. (In Russ).

Semenov V. (2003) The agro-industrial complex cannot be stopped like a factory: everything either grows or dies here: Problems of the agro-industrial complex. Man and labor. Number 1. Pp. 22-25. (In Russ).

Stanislavchik N. B. (2003) Foreign direct investment in the real sector of the Russian economy. The Foreign Economic Bulletin. Number 5. Pp. 45-54. (In Russ).

Ushachev I. (2004) The formation of scientific schools in agroeconomical research. The economics of agriculture in Russia. Number 6. Pp.14-15. (In Russ).

Yakovlev A.V. (1997) Regional agricultural system at the present stage of entering the market. Saratov. Publishing house of Saratov State University. 320 p. (In Russ).

Zhiltsov E., Kazakov V. (1994) Prospects for the survival of the social sphere of enterprises. Russian Economic Journal. Number 3. 1. Pp. 50-51. (In Russ).