

## DRIVERS OF STRUCTURAL MODERNIZATION IN RUSSIA'S AGRI-FOOD COMPLEX

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**Introduction.** The acceleration of innovative development, evolving consumer demand, the need for balanced interaction with the environment, globalization, and increasing competition have a significant influence on the dynamics of agri-food systems and their stability across economic, social, and environmental dimensions. The sustainable development potential of the Russian agricultural sector is grounded in the diversity of its natural, geographical, and socio-economic conditions. Leveraging this potential enables the creation of competitive advantages that ensure the domestic food market is supplied with high-quality, affordable products, support the enhancement of Russia's competitiveness in global food markets, and promote the growth of agricultural exports.

The COVID-19 pandemic has intensified competitive pressures and exacerbated negative trends in the global food market, highlighting the need to consider these factors in the development of post-crisis economic recovery strategies. Effective planning must account for both internal resource potential and external market volatility to ensure the resilience, efficiency, and sustainability of Russia's agri-food complex<sup>1</sup>. This will make it possible to set clear priorities for the development of the national agri-food complex. The strategy of long-term agri-food complex economic development involves identifying priorities, substantiating the growth factors of the agri-food complex and sources of economic development new quality. The main formation vector of a new model for the country's agri-food complex development is structural modernization aimed at developing scientific potential and introducing innovative solutions, transforming food value chains. The strategic direction of Russia's agri-food complex structural modernization includes the elimination of structural imbalances through the development of the scientific sphere and production infrastructure, stimulating the

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<sup>1</sup> Aganbegyan, A.G., Klepach, A.N., Porfiriev, B.N., Uzyakov, M.N., & Shirov, A.A. (2020). Post-pandemic recovery of the Russian economy and the transition to sustainable socio-economic development: Forecasting problems, 6(183), P. 18-26.

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formation of long-term competitive advantages<sup>2</sup>. This will ensure the growth of Russia's contribution to ensuring global food security through participation in global value chains. The solution of food security problems at the national level is associated with the growth of products production with a high share of added value, competing in costs and prices based on the use of innovative strategies for the development of industries and enterprises, investment activity, and stimulation of domestic aggregate demand.

The aim of this study is to substantiate the factors driving structural modernization of Russia's agri-food complex to ensure food security and enhance the country's competitiveness in the global food market. The narrative section presents the results of an analysis of changes in the qualitative and quantitative characteristics of Russia's agri-food complex within the context of national food security. Structural balance is identified as a decisive factor in establishing priorities for the sustainable functioning and competitiveness of the agri-food sector amid increasing economic openness. Accordingly, identifying and analyzing the factors influencing structural changes is critical for creating optimal conditions for a balanced and resilient agri-food complex.

The discussion section examines the perspectives of leading Russian scholars on the development prospects of the agri-food complex, structural transformations, and the role of institutions and the state in ensuring balanced growth. The volume and structure of state support not only determine the stability of the sector but also directly affect the competitiveness of domestic producers in international markets. The COVID-19 pandemic and sanctions have increased budgetary pressures, constraining revenue sources and expenditures, and thereby necessitating the formulation of a new growth model for the agri-food complex, including alternative financing strategies for structural modernization.

In conclusion, the study emphasizes the need to strengthen strategic protectionism and adopt a coordinated approach to managing structural modernization in Russia's agri-food complex to secure sustainable growth, enhance competitiveness, and maintain food security.

**Methodology.** In line with the research objectives, the following tasks were addressed:

- Theoretical substantiation of an economic growth model for Russia's agri-food complex based on the formation of effective structural changes;
- Assessment of the structural dynamics of the agri-food complex and the

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<sup>2</sup> Ermolova, O.V. (2018). Structural modernization as a priority of the development strategy of the agri-food complex. *Regional agrosystems: economics and sociology*, 1, 2.

Ermolova, O., Yakovenko, N., Kirsanov, V., & Ivanenko I. (Eds.). (2019). Structural changes in the agri-food complex: priorities and management mechanisms. IOP Conference Series: Earth and Environmental Science. 12th International Scientific Conference on Agricultural Machinery Industry. INTERAGROMASH, 012072.

identification of the factors influencing these changes;

- Justification of priority directions for structural modernization of the agri-food complex, taking into account emerging challenges and threats.

The study employed methods of comprehensive and systemic analysis, comparative analysis, and monographic research. To identify trends in self-sufficiency for Russia's basic food products, the analysis relied on the dynamics and structure of food resource formation and utilization, using food resource balance data. A key indicator characterizing the development of the national agri-food complex is the level of self-sufficiency in essential foodstuffs. The population self-sufficiency coefficient for a given group of food products (i-group) was calculated as the ratio of actual domestic production to domestic consumption. Four levels of self-sufficiency were distinguished:

- High:  $\geq 100\%$
- Acceptable: 75–99%
- Low: 50–74%
- Unacceptable/dangerous:  $< 50\%$

The study was based on official data, including annual food resource balances and consumption statistics, as well as materials from the Federal State Statistics Service of the Russian Federation for the period 2015–2024.

**Results.** The situation with the spread of coronavirus, the sanctions confrontation between Russia and a number of Western countries have affected all economic sectors of the country, including the agro-food complex. The growth of socio-economic instability causes new threats and challenges to the country's food security<sup>3</sup>. From 2020 to 2022, there was a decrease in Russia's GDP. In 2024, GDP increased by 4.1% of its physical volume compared to 2023 and amounted to 201.15 trillion rubles in current prices. The growth of GDP was most influenced by the positive dynamics of indices of physical production volume in the following industries: information and communications, hotels and restaurants, financial and insurance activities (Fig. 1). A positive trend is the increase in production volume in the manufacturing sectors of the Russian economy. The agro-food complex of Russia was less affected by the influence of negative factors. The inertia of the backbone sector development of the agro-food complex - agriculture, the production resources accumulated before the pandemic, sanctions and devaluation of the ruble, the relatively high level of state support for domestic rural producers in previous years reduced the risks of losses. However, in 2024, a decline in agricultural GDP is noted - 96.6%.

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<sup>3</sup> Anfingentova, A.A., Ermolova, O. V., & Morekhanova, M.Yu. (2020) Theoretical and methodological substantiation of the restoration strategy and development of the Russian agri-food complex in the context of global risks and uncertainty. *Regional agrosystems: economics and sociology*, 3.

Lyasnikov, N. V., Anishchenko, A. N., & Romanova, Y. A. (2023). Threats to food security in the Russian Federation under a new wave of sanctions tensions. *Prodovol'stvennaâ politika i bezopasnost'*, 10 (3), 393-408. <https://doi.org/10.18334/ppib.10.3.118331>

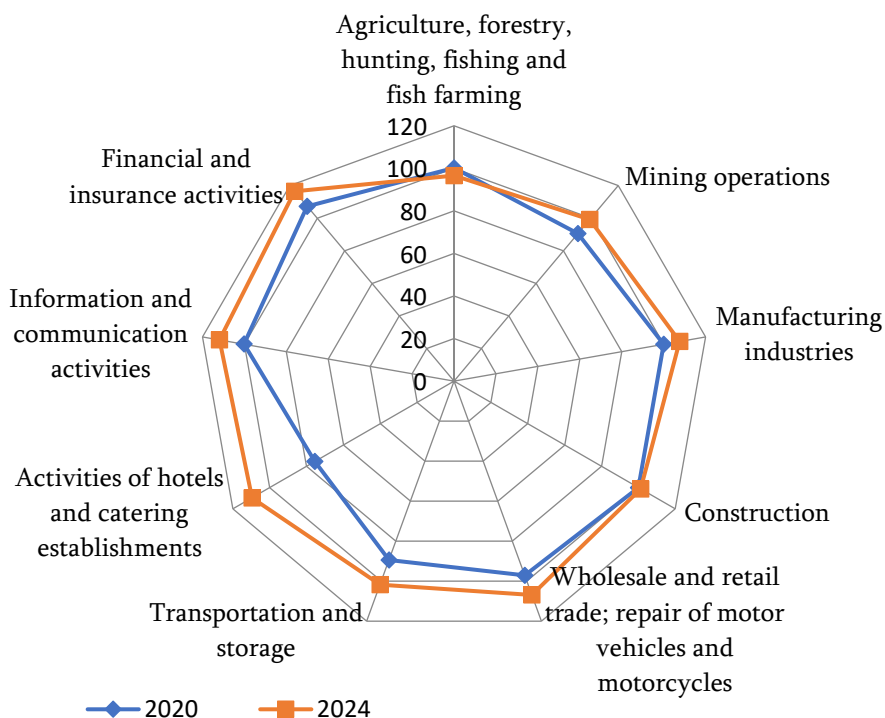


Figure 1. Year-on-Year Production Changes in Russia's Key Economic Sectors (2020 and 2024, Constant Prices, %)<sup>4</sup>

The strategic potential of the agri-food complex and long-term competitiveness largely determine the country's food security. Implementation of the import substitution strategy in Russia made it possible to achieve self-sufficiency in some types of agricultural products and foodstuffs (Table 1). Currently, there is an excess production of grain, potatoes, vegetable oil, poultry, pork, sugar. This made it possible to strengthen the competitive positions of national producers in the world food market<sup>5</sup>.

In 2024, Russia's food exports amounted to USD 42.6 billion, representing 98.9% of the 2023 level. The share of agricultural and food products in total exports increased to 10%, up from 8.8% in 2020. Despite rising logistics costs and restrictions on financial transactions with foreign partners, the Federal Customs Service reports that Russia

<sup>4</sup> calculated from the given Russian Statistical Yearbook 2024: Stat. book/Rosstat - M., 2024 – 630 p. – p. 272. [https://rosstat.gov.ru/storage/mediabank/KrPEshqr/year\\_2020.pdf](https://rosstat.gov.ru/storage/mediabank/KrPEshqr/year_2020.pdf); Rosstat data. URL: [http://www.gks.ru/wps/wcm/connect/rosstat\\_main/rosstat/ru/statistics/enterprise/economy](http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/enterprise/economy)

<sup>5</sup> Yakovenko N.A., Ivanenko I.S., Voronov A.S., Saninsky S.A. Trends in the formation of the commodity composition of the russia's agrofood exports. Journal of Advanced Research in Dynamical and Control Systems. 2020. T. 12. № 5 Special Issue. P. 337-345.

expanded exports of several key food products. For instance, poultry exports increased by 1.2 times, and pork exports grew by 1.4 times. Grain and oilseeds continued to account for a substantial proportion of agricultural exports.

Food imports in 2024 reached USD 37.7 billion, or 107.0% of the 2023 level. The share of food imports in total trade slightly decreased from 13.0% in 2020 to 12.8% in 2024. Imports of milk and dairy products, as well as certain vegetables and fruits, increased during this period.

Table 1

Dynamics of self-sufficiency in basic food products in the Russian Federation<sup>6</sup>

Agricultural products and food products	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Seed	144,9	146,0	156,6	173,4	152,4	165,6	149,9	191,4	173,5	149,4
Meat and meat products	88,8	90,9	93,1	95,4	97,0	100,1	99,7	101,8	101,7	102,0
Milk and dairy products	80,4	81,3	82,7	83,9	83,7	84,0	84,2	85,7	86,0	85,0
Potato	102,6	93,2	91,1	95,3	95,1	89,2	88,4	94,5	101,0	91,6
Vegetables	86,8	87,4	87,6	87,2	87,7	86,3	86,5	88,5	89,1	88,8
Fruit	32,5	36,5	33,1	38,8	40,2	42,4	44,4	47,3	44,6	42,8
Fish and fish products	132,8	140,6	138,7	158,5	152,8	160,7	153,2	165,3	163,7	165,0
Vegetable oil	127,0	142,6	153,5	157,4	179,1	200,0	182,0	211,1	245,4	251,8

The COVID-19 pandemic has had a significant impact on the formation of both global and local food chains. A distinctive feature of Russia's agri-food complex is its ability to participate simultaneously in global food chains and in the development of localized chains. Studies indicate a growing trend toward the localization of agricultural production and supply, driven by the desire of producers to reduce production costs through lower transport expenses and by temporary border closures at both international and regional levels. Disruptions in logistics have led to the breakdown of established production linkages, prompting the formation of local product chains and diversification of business activities focused on local partners and consumers.

At the same time, the sector's heavy reliance on foreign technologies and equipment remains a critical constraint, limiting sustainable development and the enhancement of competitiveness (Figure 2). Despite the implementation of an import substitution strategy, a major external risk for the development of Russia's agri-food

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<sup>6</sup> calculated on the basis of "Food Supply Balances". URL: [https://www.gks.ru/enterprise\\_economy](https://www.gks.ru/enterprise_economy)

complex remains the high dependence of its production potential on imported machinery, equipment, technologies, and innovative developments. The sustained growth of poultry meat production and the expansion of export deliveries rely heavily on foreign technologies and imported breeding stock. In 2020, imported crosses accounted for 95–98% of domestic broiler meat production. According to Rosselkhoz nadzor, from 2021 to 2023, the volume of imported hatching eggs decreased by half, with more than 400 million hatching eggs imported in 2023, representing a 34% decline from the previous year. Between 2020 and 2024, the Russian veterinary pharmaceutical market also remained largely dependent on imports, with imported products accounting for an average of 56% of sales.

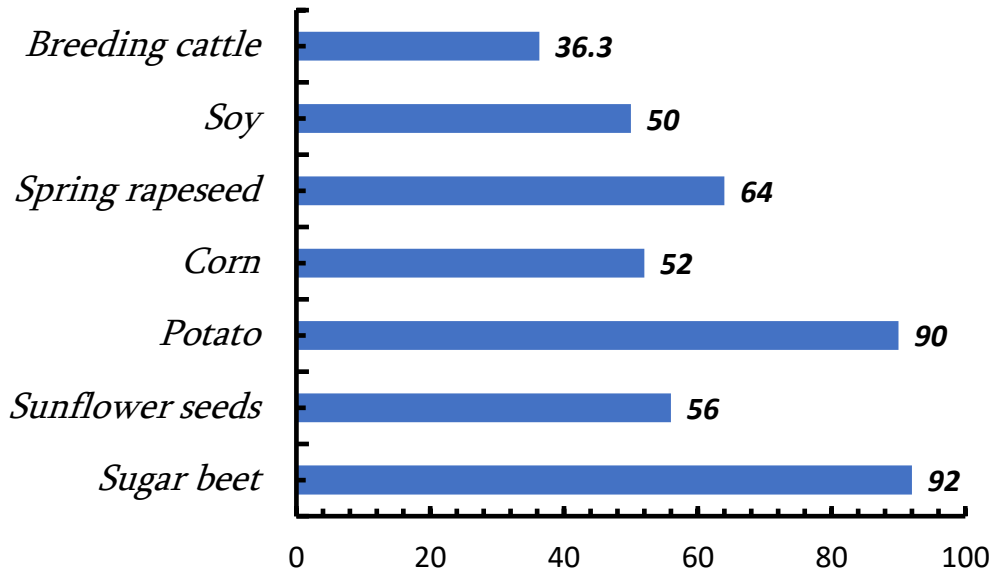


Figure 2. Imports of crop seeds and pedigree livestock for 2024, % of total<sup>7</sup>

In crop production, dependence on imported seeds remains high for several crops, particularly sugar beet. State policies promoting domestic seed production and selection have reduced imports of grain, leguminous crops, and sunflower seeds. In 2024, import quotas reduced sunflower seed imports 2.3-fold, corn 5.8-fold, spring rapeseed 3.3-fold, and soybean seeds 6.9-fold compared to 2023. Sugar beet seed imports decreased marginally: 2.4 thousand tons were imported out of a 2.9-thousand-ton quota. Overall, Russia imported 29.8 thousand tons of seeds in 2024, 2.5 times less than in 2023. Reductions were particularly pronounced for potato seeds (-93.1%), barley (-84.5%),

<sup>7</sup> calculated from the given URL: <https://agrovesti.net/lib/industries/corn/analiz-importa-semyan-dlya-poseva-osnovnykh-vidov-zernovykh-i-zernobobovykh-kul-tur-v-2012-2020-gg.html>

corn (-80.4%), onion sets (-76.2%), soybeans (-74.3%), wheat (-68.8%), rapeseed (-68.1%), vegetables (-56.7%), and sunflower (-50.6%).

The weakening of the ruble has a dual effect on agricultural production. While currency devaluation strengthens the global competitiveness of Russian agricultural and food producers in the short term, competitiveness depends on both price and quality, as well as delivery conditions and product attributes. At the same time, higher prices for imported feed, vaccines, veterinary drugs, seeds, and equipment increase production costs, particularly in livestock, raising the cost of meat and dairy products. This may reduce domestic demand and weaken purchasing power, highlighting the continued vulnerability of the sector to external dependencies.

In the context of the COVID-19 pandemic and the sanctions standoff, there is an increase in protectionist trends in the global food market<sup>8</sup>. The states' protectionist policy in the food market can lead to a reduction in exports and imports of agricultural raw materials and foodstuffs, and to the need to develop social institutions to expand domestic demand. This leads to an increase in the budgetary burden, which, in the context of a decrease in the resource base of the state budget, can worsen the quality of state institutions for supporting the agri-food complex. In these conditions, it is necessary to redistribute resources (primarily financial) to the formation of "growth points"<sup>9</sup>.

Despite the positive dynamics of production indicators in the sectors of the agri-food complex, the incompleteness of structural restructuring does not allow using the existing growth potential. The transition to the stage of balanced effective development of the agri-food complex requires structural modernization with the completion of the missing links and the formation of optimal vertical links in the value-added chains, an increase in the level of intra-complex balance of production factors used, the strengthening of vertical intersectoral ties and a reduction in transaction costs associated with the acquisition of the necessary resources.

**Discussion.** The study of economic structures and structural changes, their impact on long-term growth and stagnation, the transformation of institutions, the characteristics of global value chains and international fragmentation are given more and more attention by both Russian and foreign scientists<sup>10</sup>. "Perhaps one of the biggest

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<sup>8</sup> Dorofeeva, L.I., Ermolova, O.V., & Kirsanov V.V. (2020). Priorities and mechanisms of management of the agri-food complex intersectoral structure: News of the Saratov University. New series. Series: Economics. Management. Right, 20(4), 429-438.

<sup>9</sup> Espitia, A., Rocha, N., & Ruta, M. (2020). Covid-19 and Food Protectionism: The Impact of the Pandemic and Export Restrictions on World Food Markets. World Bank. 28.

<sup>10</sup> Emilian Dobrescu (May 2011) Sectoral Structure and Economic Growth. Romanian Journal of Economic Forecasting – 3/2011: pp. 5-36.

Katrin Tamm, Helje Kaldaru, Sectoral structure and socio-economic development: searching for the relationship. Economics and Management: Current Issues and Perspectives. 2008; 12 (3): p. 358-369.

problems of the current economic policy and long-term strategic constructions is the lack of the necessary level of coordination of a wide range of structural changes in the economy with the parameters of economic dynamics and, ultimately, with specific measures of economic policy”<sup>11</sup>.

The model of economic growth of the agri-food complex in Russia, aimed at increasing production volumes to the established parameters of food independence and being inherently restorative, based on the involvement of unused capacities and labor in the production, has exhausted itself. The continuing growth in the production of agricultural products leads to oversaturation of certain segments of the domestic food market, and a decrease in the profitability of domestic producers. This is confirmed by the studies of Russian scientists<sup>12</sup>. This trend is aggravated by a drop in income and effective demand of the country's population, increased barriers to entry into the foreign market, and restrictions associated with the COVID-19 crisis and sanctions. Currently, an active discussion is underway on the acceleration of the growth rate of the agri-food complex and the search for sources of this growth that are adequate to the country's capabilities. It is recognized that while maintaining the current rates of economic growth, it is difficult to achieve an increase in competitiveness in the agri-food complex. We stick to the opinion of Russian scientists that a qualitatively new stage in the development of the complex should be focused on the formation of national intersectoral segments of global reproduction systems, reaching a higher level of production cooperation, overcoming the technical and technological lag in all links of the complex. This will contribute to the greater stability of the competitive position of agricultural products and foodstuffs national producers.

The effectiveness of the structural modernization of the agri-food complex in Russia is associated with the most complete use of the resource and innovation potential,

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Kleiner G.B. Systemic balance of the economy: basic principles // System analysis in economics - 2014. Volume 1. Moscow: CEMI RAN, 2014. P. 9-18.

<sup>11</sup> Uzyakov M.N. Production structure and economic development of the Russian Federation / M.N. Uzyakov // Actual social and economic problems of Russia. Materials of the scientific session of the Economics Section of the Russian Academy of Sciences (September 22-23, 2016) - M. Publishing house Pero, 2016. -- 108 p. - p. 40-43. P. 40.

<sup>12</sup> Ksenofontov M.Yu., Polzиков A.D., Verbitsky Yu.S., Melnikova Ya.S. To assess the potential for increasing agricultural production and possible shifts in its structure / M.Yu. Ksenofontov, A.D. Polzиков, Yu.S. Verbitsky, Ya.S. Melnikova // Problems of forecasting. - 2017. - No. 6. - P. 69-86.

Yakovenko N.A., Ivanenko I.S., Voronov A.S. Assessment and development prospects of the export potential of the agri-food complex of Russia // International agricultural journal. 2018. Vol. 61.No. 5 (365). S. 73-77. DOI: 10.24411 / 2587-6740-2018-15083.

the transition to the fifth and sixth modes, the introduction of digital technologies<sup>13</sup>. This requires a significant increase in investment, development of credit infrastructure, expansion of state support for domestic producers of agricultural products and food<sup>14</sup>. Restrictive measures introduced by states in order to protect national interests have led to instability in the interaction of enterprises and disrupted the functioning of global value chains. The volume of federal budget expenditures has increased, while the sources and volumes of the revenue side are limited. The sharp increase in federal budget spending in 2020 creates certain problems for the following years. In 2021, a nominal cost reduction of 6% is projected. Under the conditions of severe financial constraints, the implementation of the agri-food complex structural modernization policy is problematic.

Structural modernization of Russia's agri-food complex involves significant institutional transformations associated with changes in the system of state regulation in the agricultural sector of the economy, accelerated introduction of digital and telecommunication technologies, optimization of strategies for the local food chains formation and inclusion in global value chains.

**Conclusion.** The study demonstrates that the outpacing growth of Russia's agri-food complex has been supported by a combination of favorable macroeconomic conditions, import substitution, improved global market opportunities, and targeted government regulation. These factors have strengthened food security, expanded export potential, and enhanced the international competitiveness of Russian producers.

However, structural imbalances persist, particularly in non-agricultural segments of the value chains, and technological modernization remains limited and fragmented. Sustainable development of the agri-food complex requires deep structural transformations, including qualitative changes in resource allocation, inter-industry linkages, and the overall production structure. Short-term protective factors, such as reduced foreign competition, cannot substitute for comprehensive long-term strategies.

The findings underscore the importance of aligning economic growth with structural modernization. Balanced development must prioritize the rationalization of production structures, the strengthening of effective intersectoral relations, and the diversification of resource use. Government intervention remains crucial in stimulating innovation, facilitating technical and technological upgrades, promoting resource-efficient agricultural practices, developing infrastructure, and supporting the export of high value-added products.

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<sup>13</sup> Dzwigol, H., Dźwigol-Barosz, M., & Kwilinski, A. (2020d). Formation of Global Competitive Enterprise Environment Based on Industry 4.0 Concept. *International Journal of Entrepreneurship*, 24(1), 1-5.

<sup>14</sup> Shutkov, A.A. (2017). Structural transformations in the agricultural sector of the economy, stages and results: problems of modernization and import substitution: MID (Modernization. Innovation. Development). 8 (1), 31-38.

In conclusion, the sustainable growth and resilience of Russia's agri-food complex depend on the implementation of a coordinated strategy that integrates structural modernization, innovation, and state support. Such a strategy will ensure the sector's ability to meet rising domestic and international demand, improve product quality, and maintain long-term competitiveness in global markets.

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**ՌՈՒՄԱՍՏԱՆԻ ԱԳՐՈՊԱՐԵՆԱՅԻՆ ՀԱՄԱԼԻՐԻ ԿԱՌՈՒՑՎԱԾՔԱՅԻՆ  
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**ԻՐԻՆԱ ԻՎԱՆԵՆԿՈ**

**Համառոտագիր**

Հոդվածն ուսումնասիրում է Ռուսաստանի ագրոպարենային համալիրի արժեքի ավելացման շղթաներում կառուցվածքային փոփոխությունները ձևավորող գործոնները: Դրա արդիականությունը բխում է անորոշության և արտաքին ցնցումների աճող ազդեցությունից ազգային ագրոպարենային համալիրների կայուն գործունեության վրա և տնտեսական աճի նոր աղբյուրներ բացահայտելու հրամայականից: Հիմնական նպատակն է գնահատել Ռուսաստանի ագրոպարենային համալիրի կառուցվածքային դինամիկան, որոշել այդ փոփոխությունները խթանող հիմնական գործոնները և գնահատել դրանց ազդեցությունը սննդի անվտանգության և ազգային մրցունակության վրա:

Ուսումնասիրությունը կիրառում է Ռուսաստանի Սննդային անվտանգության դոկտրինան համապատասխանող վերլուծական գործիքներ՝ օգտագործելով այնպիսի ցուցանիշներ, ինչպիսիք են հիմնական սննդամթերքի ինքնաբավության մակարդակը և ներմուծման մասնաբաժինը վերջնական և միջանկյալ մուտքերում: COVID-19 համավարակից առաջ գյուղատնտեսական ոլորտին պետական աջակցության համակարգված լինելը և ընդլայնումը նպաստել են Ռուսաստանի ագրոպարենային համալիրի կայունությանը: Այս աջակցությունը նպաստել է մի շարք ապրանքային կատեգորիաների ինքնաբավությանը, ներմուծումից կախվածության նվազմանը և արտահանման ներուժի զարգացմանը: Այնուամենայնիվ, ազգային արժեքային շղթաների ոչ գյուղատնտեսական հատվածներում պահպանվում է ներմուծման բարձր ինտենսիվությունը:

Արդյունքները ընդգծում են ագրոպարենային համալիրում կառուցվածքային վերափոխման անհրաժեշտությունը, ներառյալ դրա ֆունկցիոնալ և ոլորտային կառուցվածքի արդիականացումը, ռեսուրսների օգտագործման ռացիոնալացումը և արտադրությունը համապատասխանեցնելը ներքին և համաշխարհային սննդի պահանջարկի աճին: Արտադրության դիվերսիֆիկացիան, նորարարության մեջ ռազմավարական ներդրումները և աճի հետազդեքի սցենարային մոդելավորումը կարևոր են կայուն զարգացումն ապահովելու համար: Ընդհանուր առմամբ, ուսումնասիրությունը ամուր հիմք է դնում Ռուսաստանի ագրոպարենային համալիրի զարգացման ռազմավարական հայեցակարգ մշակելու համար՝ որպես դիվերսիֆիկացված, կայուն համակարգ, որը կարող է բարձրացնել պարենային անվտանգությունը, մրցունակությունը և երկարաժամկետ տնտեսական աճը:

**Բանալի բաներ՝** ագրոպարենային համալիր, կառուցվածքային արդիականացում, ինքնաբավություն, պարենային շղթաներ, պրոտեկցիոնիզմ, պետական կարգավորում

## **ФАКТОРЫ СТРУКТУРНОЙ МОДЕРНИЗАЦИИ В РОССИЙСКОМ АГРОПРОДОВОЛЬСТВЕННОМ КОМПЛЕКСЕ**

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### **Аннотация**

В данной статье рассматриваются факторы, определяющие структурные изменения в цепочках создания добавленной стоимости российского агропродовольственного комплекса. Актуальность работы обусловлена растущим влиянием неопределенности и внешних потрясений на устойчивое функционирование национальных агропродовольственных систем, а также необходимостью выявления новых источников экономического роста. Основная задача – оценить структурную динамику российского агропродовольственного комплекса, определить ключевые факторы, движущие этими изменениями, и оценить их последствия для продовольственной безопасности и национальной конкурентоспособности.

В исследовании используются аналитические инструменты, соответствующие Доктрине продовольственной безопасности России, с применением таких показателей, как уровень самообеспеченности основными продуктами питания и доля импорта в конечных и промежуточных ресурсах. До пандемии COVID-19 систематизация и расширение государственной поддержки сельскохозяйственного сектора способствовали устойчивости российского агропродовольственного комплекса. Эта поддержка способствовала самообеспеченности в ряде товарных категорий, снижению зависимости от импорта и развитию экспортного потенциала. Тем не менее, высокая импортоспособность сохраняется в несельскохозяйственных сегментах национальных цепочек создания стоимости продовольствия, что подчеркивает сохраняющуюся уязвимость.

Полученные результаты подчеркивают необходимость структурных преобразований в агропродовольственном комплексе, включая модернизацию его функциональной и отраслевой структуры, рационализацию использования ресурсов и приведение производства в соответствие с растущим внутренним и мировым спросом на продовольствие. Диверсификация производства, стратегические инвестиции в инновации и сценарное моделирование траекторий роста имеют важное значение для обеспечения устойчивого развития. В целом, исследование закладывает прочную основу для разработки стратегической концепции развития российского агропродовольственного комплекса как

диверсифицированной, устойчивой системы, способной повысить продовольственную безопасность, конкурентоспособность и долгосрочный экономический рост.

**Ключевые слова:** агропродовольственный комплекс, структурная модернизация, самообеспечение, продовольственные цепочки, протекционизм, государственное регулирование

## DRIVERS OF STRUCTURAL MODERNIZATION IN RUSSIA'S AGRI-FOOD COMPLEX

NATALIA YAKOVENKO

IRINA IVANENKO

### **Abstract.**

This article examines the factors shaping structural changes in the value-added chains of Russia's agri-food complex. Its relevance stems from the growing influence of uncertainty and external shocks on the sustainable functioning of national agri-food systems and the imperative to identify new sources of economic growth. The primary objective is to assess the structural dynamics of Russia's agri-food complex, determine the key factors driving these changes, and evaluate their implications for food security and national competitiveness.

The study employs analytical tools aligned with the Food Security Doctrine of Russia, using indicators such as the level of self-sufficiency in essential food products and the share of imports in final and intermediate resources. Prior to the COVID-19 pandemic, the systematization and expansion of state support for the agricultural sector contributed to the resilience of Russia's agri-food complex. This support facilitated self-sufficiency in several product categories, reduced import dependence, and enabled the development of export potential. Nevertheless, high import intensity remains in non-agricultural segments of the national food value chains, highlighting ongoing vulnerabilities.

The findings underscore the need for structural transformations within the agri-food complex, including the modernization of its functional and sectoral structure, the rationalization of resource use, and the alignment of production with growing domestic and global food demand. Diversification of production, strategic investment in innovation, and scenario-based modeling of growth trajectories are essential for ensuring sustainable development. Overall, the study provides a robust foundation for formulating a strategic development framework for Russia's agri-food complex as a diversified, resilient system capable of enhancing food security, competitiveness, and long-term economic growth.

**Keywords:** agri-food complex, structural modernization, self-provision, food chains, protectionism, government regulation