

# Institutional trends of Russian agriculture as problems and advantages of development

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**Abstract.** It is established that the increase in the level of food security in Russia refers to the institutional problems of the economy. It is assumed that the long-standing reproductive imbalances in the economy may manifest themselves differently in the conditions of sanctions and changes in the institutional policy of the state. The purpose and objectives of the study were to analyze the positions of various authors regarding new trends in the development of the institutional factor in their countries. Institutional trends in the Russian economy, including agriculture, are evaluated. The depth of manifestation and the temporal extent of the most important institutional trends are determined: the trend to preserve small-scale production, imbalances in the development of crop production and animal husbandry, the imbalance of prices of agricultural producers and prices of products consumed by them, the uneven spatial development of Russian regions. The scientific novelty of the study lies in the fact that the main structural imbalances and contradictions in the institutional development of agriculture are systematized. To develop a proactive regulatory impact, it is recommended that the authorities and management monitor some new reproductive proportions.

## 1 Introduction

With the adoption of the Food Security Doctrine of the Russian Federation [1], the strategy for ensuring food independence has acquired even more real features by specifying indicators of quantitative and qualitative assessment of the state of food safety and the degree of its achievement, indicators of food security. The solution to the problem of food security lies in the plane of institutional tasks because long-standing structural imbalances in the system of production and provision of food to the population, in the development of rural areas can either worsen or manifest themselves in a new way in the conditions of global foreign economic and political challenges.

For example, Zemliak, Zhebo, Aleshkov [2] believe that the main causes of food shortages in the world are the imbalances between population growth and the reduction of

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arable land due to urbanization, the increase in the energy intensity of agro-industrial production and the increase in the production of crops for biofuels, the intensification of the use of natural resources and environmental pollution, wars (civil strife) and economic inaccessibility of food and others. Guo J., et al. [3] noted the contradiction between the interests of countries that prefer to be net importers of food (120 countries) and agricultural producers.

According to Arkhipova, Gorokhova [4] Russia is facing the problem of uneven spatial distribution of agricultural production regions (12 regions out of 89 subjects of the Russian Federation) and consumer regions to which it is necessary to deliver products. According to Ivanov [5], one of the ways to solve this problem is to focus the northern territories on the development of their own production, the creation of carry-out stocks, the development of rural areas, the improvement of trade and transport infrastructure, taking into account state regulation measures. Tolstoguzov [6] linked the predominant development of the “central” regions to the detriment of the “peripheral” regions with the effect of external sanctions. However, since 2014, agricultural specialization has increased in the Northwestern region of Russia, which indicates the ability of the economy to change intersectoral resource flows.

In response, M. Konte, et al. [7] and Tolstoguzov O. V. [6] found out that 75-96% of the impact is carried out through intra-industry resource allocation. Only structural reforms in agriculture can contribute to a 50% to 50% increase in both intersectoral and intersectoral resource allocation.

Loginova, D., Mann, S. [8] examined the impact of institutional factors generated by the government, producer organizations and individual companies on the price stability of farms. Hassan F. A. [9] also identified the factors influencing the change in food prices in five countries of the world for 2000-2020: the dominant influence of oil prices, a less significant change in the exchange rate. Tleubayev A., Bobojonov I. and Götz L. [10] believe that to increase crop production productivity, instead of state subsidizing farming, other institutional tools should be used: training of farmers, production and marketing cooperation, membership in agricultural holdings, return to cultivation of abandoned land, crop insurance. Jianhua Ye, et al. [11] argue that the state should invest more in social development, ecology.

Zenchenko S., et al. [12] proposed to the Central Bank of the Russian Federation monetary policy options in combination with the policy of increasing household incomes, the purchasing power of the ruble and the development of competition, as opposed to the current policy of containing inflation. S. V. Ivanova, G. V. Kuznetsova [13] noted the huge potential of digitalization of management in agriculture, affecting the processes of biocenosis, production efficiency, and the development of rural areas and the population. S. Zavriev, A. Ignatov [14] actualized the problem of agroterrorism in the regions to increase the spread of pathogens.

In our opinion, the issue of the specifics of contradictions in the development of agriculture in Russia has not been investigated sufficiently. The changing paradigm of the development of the Russian economy should certainly affect the development of new approaches to solving imbalances and contradictions in agriculture.

## **2 Materials and methods**

The academic novelty of the research lies in the systematization of structural imbalances and the formulation of new contradictions in the modern development of agriculture in Russia as prerequisites for the development of new approaches and mechanisms for their resolution.

The purpose of the study is to clarify the most profound imbalances in the development of agriculture and related spheres of relations in Russia. The work objectives are to substantiate the depth and time extent of certain imbalances, to assess the mutual influence of individual institutional factors on the state and trends of development, to formulate directions for the development of institutions that affect the prospects of agriculture.

The main method of research was the structural-dynamic and comparative analysis of macroeconomic indicators, as well as the monographic method. Since current national statistics do not cover post-pandemic trends and even more global factors related to Russia's acquisition of full sovereignty on the global stage [15], the accuracy of some conclusions may be reduced.

### 3 Results

Academician A. I. Altukhov and co-authors [16] formulated the following major challenges for the Russian economy: low effective demand of the population for food products, underdevelopment of the trade and food infrastructure of the market; insufficiently developed national base of genetic resources of animals and plants, price imbalance for material and technical resources and agricultural products, low competitiveness of many domestic food producers, weak investment and innovative activity, the slowdown in structural and technological modernization, the gap in the standard of living in the countryside and in the city, the outflow of personnel from villages, the decrease in the continuity of rural lifestyle.

According to Novoselova E. A. [17], the threats are related to the low profitability of farms, the lack of a well-established system for purchasing products and bringing them to buyers, falsified low-quality imported goods.

Traditionally, it was considered that one of the threats to food security is small-scale agriculture because farms: with the number of cattle up to 100 animals accounted for 69.5% of the total number of agricultural organizations in 2020; with the number of cows up to 100 accounted for 75.2%; with a planted area of up to 0.1 ths ha accounted for 32.2%; with the number of employed up to 60 people occupied 75.9% [18].

Most of the production resources are concentrated in large farms, which occupied only 4.0% of the total number of farms, 11.8% of total area of crops, 3.8% of the total number of cattle, 3.4% of total number of cows.

This indicates an increase in the monopolization of agriculture, which, according to Adamskaya L. V. [19], creates a threat of irrational allocation of productive forces, disproportionate development of cities and villages. The position of Serova E. V., Nikulina A. M. [20], who believe that small and medium-sized commodity producers smooth out sharp fluctuations in the production of large companies, comes into conflict with the above-mentioned point of view.

Traditionally, the average monthly wage in agriculture was only 60% of the average Russian level in 2020, although its annual increase was about 10% [18].

The growth of material costs is the main reason for the chronic unprofitability of the production of cattle weights.

The average annual number of people employed in agriculture decreased – 95.2% in 2020 compared to the previous year. While the number of jobs increased and ranged from 20.9 to 23.1 thousand places. This indicates the intensification of the use of workers' labor.

The amount of labor spent in agriculture decreased from 21.5 bln h in 2010 to RUB 18.7 bln in 2020. Reducing the labor intensity of production created prerequisites for an increase in labor productivity and output.

M. Konte, et al. [7], Tolstoguzov O. V. [6] noted that the decline in the number of people employed in agriculture is a favorable trend, since the flow of workers from

agriculture to other sectors of the economy is considered as an example of the long-awaited intersectoral redistribution of resources.

The share of investments in agriculture in the volume of investments in the economy as a whole decreased: from 4.1 in 2017 to 3.7 in 2020 [18].

There was no stable relationship between agricultural production indices and fixed capital investment indices.

The coefficient of renewal of fixed assets at full book value decreased: from 15.2 in 2016 to 12.6 in 2020. Equipping with fixed assets significantly outpaced labor productivity growth.

The livestock production growth index lagged far behind the crop production growth index. Self-sufficiency in meat reached 100% only in 2020. Of all the categories of farms, the proportion between crop production and animal husbandry was best observed in the households of the population but the share of products produced in the households of the population decreased from 48.0% in 2010 to 26.6% in 2020.

Livestock and poultry in slaughter weight decreased the most in the structure of production [18].

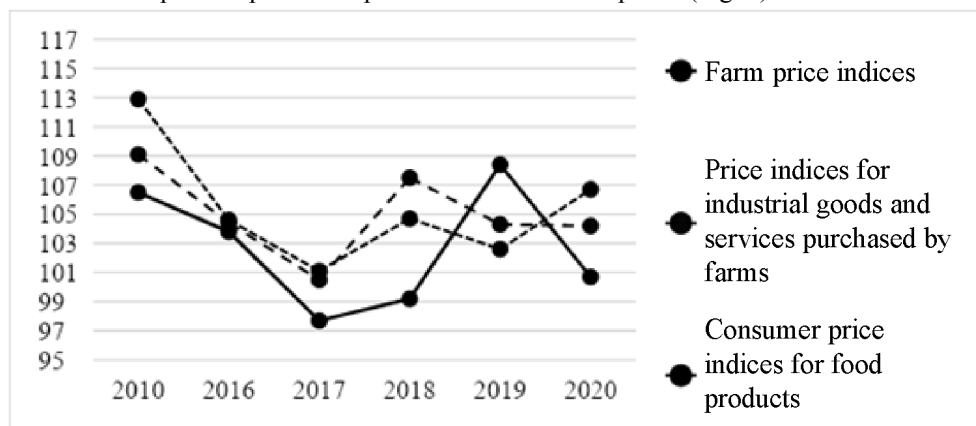
From agricultural machinery, the production of machines for cultivation decreased from 5.9 ths units in 2018 to 5.2 ths units in 2020. The main reason is the reduction of the planted area from 3.1 mln ha in 2010 to 2.3 mln ha in 2020, as well as the increase in the capacity and versatility of equipment.

There was a slowdown in the purchase indices of new equipment in farms: from 1.43 in 2016 to 1.24 in 2020 (tractors), 1.89 vs 1.27 (combines), from 1.81 to 0.34 (beet harvesters), from 1.92 to 1.14 (roller harvesters). The write-off indices of worn-out tractors increased from 0.8 to 1.06, combines – from 0.83 to 1.07, roller harvesters – from 0.74 to 1.17, milking machines and aggregates – from 0.68 to 1.18 [18].

According to Alyokhin S. I. et al. [21], a significant part of the country's population has incomes below the subsistence minimum. Consumption of certain types of food is below recommended standards: meat consumption is 82% of the norm, milk and dairy products – 80%, fish and fish products – 54%, vegetables – 75%. The consumption of bread is exceeded by 15%, sugar – by 40%.

The increase in household capitals decreased from 4.6% to 3.4%, and in the 1st quarter there was not an increase, but a decrease in savings by 12.8%. In 2021, Russians could buy less chicken meat, eggs, sunflower oil, granulated sugar, potatoes, fresh cabbage, carrots, and wheat flour [18].

The problem of “price discrepancy” is still relevant. Prices of farms are consistently lower than the price of purchased products and consumer prices (Fig. 1).



**Fig. 1.** Dynamics of prices for agricultural products, purchased industrial goods and services, consumer prices.

The point of view that most of the problems of food security in Russia are related to its dependence on imports is increasingly appearing in the discussions. Anishchenko A. N. [22] clarified: in the presence of a rich production and resource base, Russia allowed to have a high share of imports even of the food that it could produce itself. This situation continued until 2014. In 2020, the value of agricultural raw materials and food exports exceeded the value of imports.

## 4 Discussion

The results obtained during this study and their comparison with previously obtained results [23] showed a decline in the relevance of some problems in agriculture. And it is not about favorable weather conditions, but about changing institutional approaches to regulating the economy of industries. On the other hand, new problems have emerged, which have not been thoroughly analyzed in the literature yet, since statistical material has not been accumulated.

## 5 Conclusion

In addition to the structural imbalances mentioned by Alekseeva N. A., Fedorova N. P. [23], the following reproduction proportions, which were the result of this study and which together with the above proportions constitute academic novelty, the following numbers need constant monitoring: the index of production growth in the food industry and the index of production growth in agriculture; the coefficient of production concentration by type of agricultural products; correlation between the level of subsidies to agriculture and the efficiency of agricultural production; the impact of structural reforms on intrasectoral and intersectoral redistribution of resources; the country's population growth index and the arable land area growth index; the dynamics of the level of industrial specialization of regions.

Planning and economic, accounting and statistical, and financial management bodies should be able to form new statistical databases quickly, monitor the degree of manifestation of structural imbalances in the economy, adjust the paradigm of agricultural development, and pursue a more flexible and effective policy to strengthen food security. In the future, the policy should be more proactive and not be forced by external causes.

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