

Development of Agriculture in the Context of Geopolitical Tensions

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Abstract. The conditions of instability in the country, due to economic and political aspects, dictate the need to expand and strengthen the agricultural potential that can provide the country's population with food. Despite geopolitical tensions, domestic agriculture has shown decent results in the past year, with some production volumes reaching scale. The purpose of this study is to study the key trends in the development of agriculture, the emphasis is placed primarily on crop production. Realizing the importance of ensuring food security, the tasks of the state should be to create stimulating conditions for intensifying the process of import substitution. It is necessary to expand the potential of domestic breeding, the development prospects of which are seen in the application of the "triple helix" concept (state-business-science). Providing farmers with highly effective plant protection products is also an important component of the agrarian policy of the state, which ensures, first of all, an increase in production and, as a result, consumption. In 2023, the mechanism of state support is being improved; appropriately raised the issue of adjusting the directions and priorities due to sanctions pressure and a shift in emphasis towards the policy of import substitution.

1 Introduction

Agriculture, traditionally a priority for the development of the domestic economy, should now be given special attention. 2022 has been a mixed year for agriculture. The positive aspects of the past year were record harvests of grain and oilseeds, timely measures of support from the state, which mitigated the negative effect of the imposed sanctions.

Modern economic conditions have emphasized a certain dependence in the context of the import of certain seeds and agricultural equipment necessary in the process of crop production, spare parts for it. These challenges for the industry predetermined the creation of new conditions for the development of agriculture and the strengthening of state support measures.

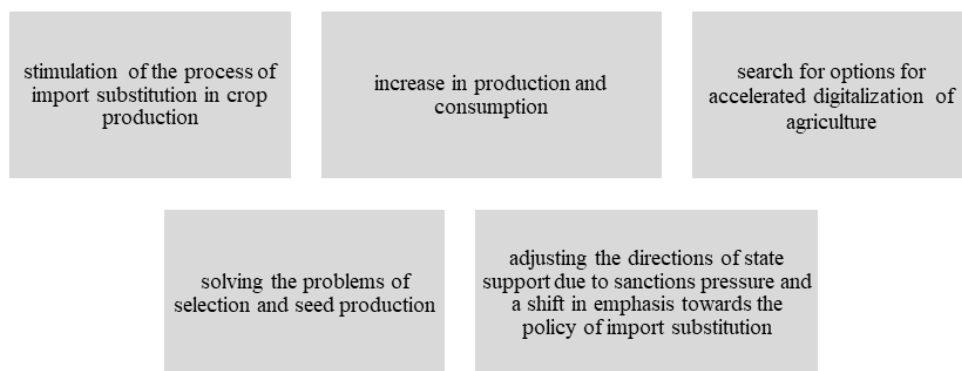
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2 Research Methodology

The information and empirical base of the study was made up of official statistical materials of the Ministry of Agriculture of the Russian Federation, the analytical journal Pole; analytical, review developments of researchers published in periodicals and the Internet. The article systematizes the results of a study of analytical companies and the opinions of representatives of industry unions regarding the trends in the development of agriculture in the future, in particular, the emphasis is on crop production. The study is supported by a graphical method for presenting findings.

3 Results and Discussions

The results of analytical companies and the opinions of representatives of industry unions made it possible to determine the main trends in the development of the crop sector for the current year 2023 (Figure 1).



ig. 1 Priority areas for the development of crop production.

It is logical that the process of import substitution continues to be an urgent issue in the development of the industry, which increases its necessity and relevance in modern conditions. In addition to potatoes, grains and vegetables, the list of self-sufficiency needs includes their means of production and working capital.

Thus, in accordance with the indicators of the Doctrine of Food Security, the indicator of domestic selection by 2030 should be at least 75% of seeds [9-11].

It is assumed that the achievement of such an indicator is not quick and easy for our country. However, the measures of state support for the development of breeding and seed production create opportunities for expanding such potential. We are talking about the use of such additional support measures as duties and quotas. According to Russian breeders, it is possible to achieve the indicator for the replacement of corn and sunflower by 2024–2025. The situation with import substitution of beets and seed potatoes continues to be close to catastrophic (Figure 2) [12-14]. The figure clearly shows that 96.6% of sugar beet is represented by foreign seeds; for potatoes, the figure is 65.2%, sunflower accounts for 72.7%.

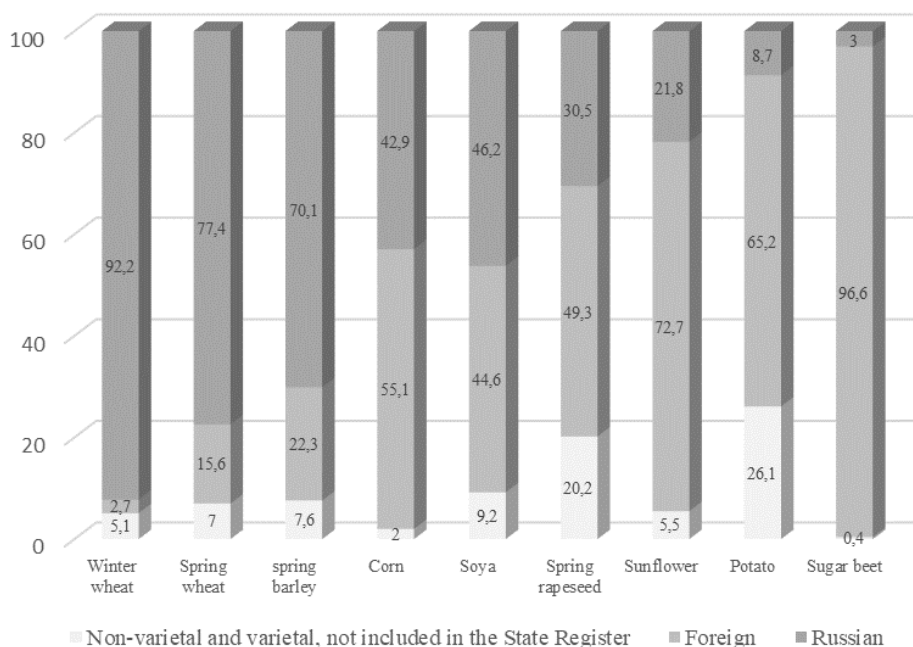


Fig. 2 The share of domestic and imported selection in the total volume of sown seeds in 2022 (as of 30.03.2022).

The share of such a wide use of seeds of imported selection currently causes justified concern, since the developed domestic selection and seed production are the basis of the country's food security [4]. Experts also noted that the decrease in yield and loss of agricultural products are due to poor-quality seeds of both domestic and imported selection, the sowing rate of which reaches 30% [3].

In 2022, a project was launched to build a selection and seed center in the Kursk region. Despite the significant amount of investments (847 million rubles with a production capacity of 27.4 thousand tons per year), the locality of scientific and innovative activities hinders the development of the system of domestic seed selection [7]

In this Center, it is planned to grow planting materials for oilseeds, cereals and leguminous crops [15]. After the crop is harvested, it is sent to the selection and seed center. This production structure can be interpreted as a platform for projects related to import substitution and the formation of domestic seed production.

One of the effective tools for solving the problems of selection and seed production can be the interaction of the state and business with the involvement of specialists from the scientific field, the so-called "triple helix" concept (state-business-science). We are talking about the need to consolidate the efforts of all parties.

In addition to the above problem, the sanctions also affected the agricultural machinery market. On the one hand, it is expedient to develop this segment of the market, to improve Russian agricultural engineering [16-18].

So, at present, the needs of agricultural producers are met at the expense of domestic producers, except for tractors of traction class 1.4 and 2 [19]. These machines are produced in the Republic of Belarus, the production of which is sufficiently regulated. There are changes in the logistics corridors, which have led to problems with the supply of some components. The listed problems are solved as far as possible in the conditions of sanctions pressure. Thus, over the 10 months of 2022, the production of Russian agricultural

machinery increased by 12%, exceeding the volume of 200 billion rubles. First of all, the incomes of farmers solve problems and predetermine the prospects for the development of the indicated obstacles [6].

However, according to experts, it is the fall in incomes and the not always stable financial component of the farmers' activities that will lead to savings on this item of purchases, which in turn acts as a destimulating condition for the development of the industry and may have an impact on crop production in general.

Another factor is the direct financing of the Program, which provides an opportunity to purchase equipment at a discount [21]. In 2023, this amount should be only 2 billion rubles. Self-propelled machinery, which is expensive, will be sold without discounts under the support program, which will reduce the ability of farmers to renew their fleet.

The next important aspect of the development of the industry should be a decrease in the grain harvest.

2022 was characterized by a record year in terms of grain harvest. Industry experts note that the country will not be able to achieve such a result in 2023 [6].

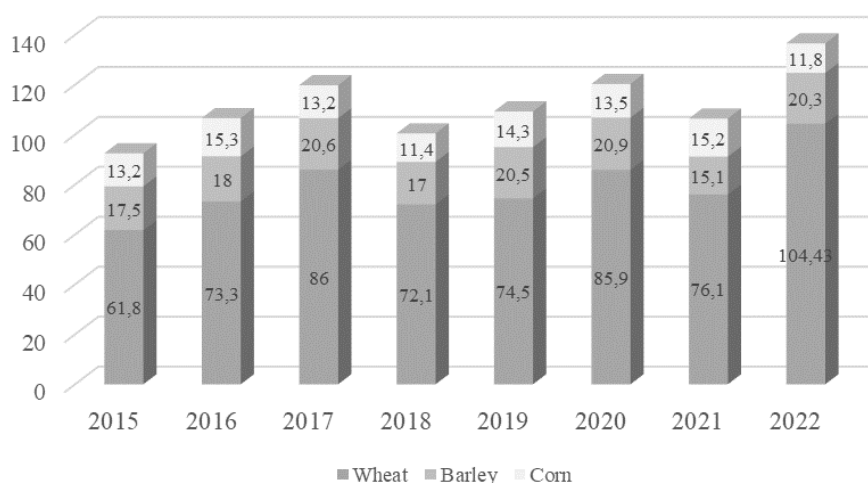


Fig. 3 Gross grain harvest in the context of a number of crops, million tons

The increase in production and consumption is also an important point in the expenditure of Russian farmers in 2023 [20]. Difficulties in this aspect are not predicted. Associations note the existence of conditions conducive to increasing production. The Oil and Fat Union notes the possibility of developing processing capacities. In 2023, the provision of farmers with mineral fertilizers will be completed. The production of the most demanded mineral fertilizers in our country is growing; for 9 months of 2022, nitrogen fertilizers increased by 6% and phosphate fertilizers by 4%. Potassium chloride is less in demand in the domestic market in terms of consumption, and the decline in its production is holding back the overall dynamics in the industry [6]

Classical mineral fertilizers are used in the country's agriculture. So, over the past 7 years, their consumption has doubled (up to 5 million tons). According to the forecast of the Ministry of Agriculture, it is planned to achieve this indicator up to 8.8 million tons.

The production and use of biomineral fertilizers is a promising direction in the development of plant nutrition technologies. PhosAgro, the world's leading fertilizer producer, plans to launch a line of biomineral fertilizers with improved characteristics.

At the end of 2022, there is an increase in domestic production of chemical plant protection products by 5-10%.

The tasks of the plants built by JSC Firma August, Chance Enterprise, Soyuzagrokhim include not only providing the domestic market with supplies of chemical plant protection products, but also the possibility of expanding the geography of presence at the international level.

Processing capacities are expanding in accordance with the established plan of the federal project “Export of agricultural products”, ensuring the growth of oilseeds production. There is a schedule ahead of schedule, the indicators of the federal project for the production of oil and fat products and their exports are overfulfilled. However, geopolitical tension predetermines the location of processing facilities.

The dominant problems of the industry are due to internal and external logistics. Overcoming some difficulties is seen in increasing the turnover of wagons, the throughput of port infrastructure, reducing freight rates and export insurance

In 2023, the mechanism of state support is being improved, the issue of adjusting the directions caused by sanctions pressure and a shift in emphasis towards the import substitution policy has become relevant.

Small and medium-sized enterprises, self-employed and citizens leading personal subsidiary plots that are engaged in the production of potatoes and other vegetables can count on support from the state within the framework of the new federal project “Development of vegetable and potato growing” (implementation from 2023) [5]

The financial support instrument is subsidies provided for agrotechnological work, for the production of vegetables, including elite varieties, in open and protected ground - in greenhouses and hotbeds using supplementary lighting technology.

Despite the versatile and prompt state support for the industry, the introduction of modern technologies and the transition to digitalization are becoming a prerequisite for efficient modern production.

We agree with the opinions of experts regarding the advantages of digitalization and the introduction of technologies, which consist in increasing the efficiency of the use of chemicals, fertilizers, water, improving product quality and increasing crop yields [8].

Realizing the importance of such a trend in the development of the economy as a whole and the industry, the rather low possibilities of its application in the activities of farmers due to the lack of financial resources [2], it is necessary to expand the existing methods and tools of state support. This is possible through grant financing, concessional lending, tax incentives and subsidies [1].

4 Conclusions

The study made it possible to identify aspects that have both favorable and undesirable consequences for the development of agriculture, in particular crop production. This made it possible to comprehensively present the problems of the industry in the context of geopolitical tensions and determine targets for their resolution. So, despite the development of agriculture in the conditions of instability of the Russian economy, crop production is in a fairly comfortable position. Volumes of grain and other crops are characterized by scale and can be exported. In order to avoid a reduction in the harvest, it is necessary to create conditions to stimulate the process of import substitution, increase production, develop selection and seed production, thereby ensuring the food security of the country. Therefore, attention from the state needs to be increased and strengthened by adjusting the directions of support and financial support. It is urgent to improve the existing regional programs to support crop production with an emphasis on new priorities.

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