The specialization areas of grain production focused on the export of products

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Abstract. The country’s export objectives, aimed at the growth of the Russian economy, are best addressed by highlighting the competitive advantages of its border areas. In wheat exports, as of today, Russia ranks first in the world, but its gross harvest rises in conditions of low-quality grain production. The paper analyzes the production parameters of spring wheat cultivation, explores the dynamics of its sown areas, gross yield, and yield by federal districts for the period 2001-2017. The article calculated the structure of crops and wheat production, indicators of its effectiveness depending on the quality of grain in the agricultural organizations of the country. The conditions for economic growth of individual border areas of the country are determined on the basis of the development of efficient production of strong and hard varieties of spring wheat in the regions of Western Siberia. A mechanism has been developed and proposed for creating a single large-scale West Siberian specialized zone for the sustainable production of high-quality spring wheat commercial grain with sales to the neighboring countries of the Asian continent.

1. Introduction

The globalization of the economy, significant changes in world politics are causing scientific interest in solving issues related to the functioning of cross-border regions. It is advisable to solve export tasks that are on the agenda of the country today and are of great strategic importance for ensuring the growth of the national economy in close partnership with the border regions of Russia. In this regard, we need to identify the competitive advantage of these territories, highlighting the main points of their growth, contributing to the sustainable and dynamic development of the economy, both of the regions themselves and of the country as a whole.

The favorable economic and geographical position of Russia on the world map and the colossal soil and climatic capabilities of the national territory make it possible to produce and sell competitive products on the world markets of the country. From this point of view, our close neighborhood with the countries of the Asian continent is the most economically attractive. In particular, the regions of the Siberian Federal District are able to reliably and sustainably provide the fast-growing population of the Asian continent with high-quality agricultural raw materials and food.
2. Materials and Methods
The data of the Federal State Statistics Services (FSSS) of Russia [7] and the indicators of annual reports of the Ministry of Agriculture of the Russian Federation [8] presented on the official websites of organizations are used as the main empirical material. The object of the research is the production of spring wheat in the country and certain regions of the Siberian Federal District. We used abstract-logical, analytical, design-constructive research methods in our work. The research was also conducted using the application software Microsoft Word and Excel.

3. Results
The world’s main food grain crop is wheat, a wide variety of foods with high nutritional value, satisfying simple human food needs and gourmet requests can be produced from it. Russia occupies the leading position in the world in the export of wheat, but at the same time, the low quality of its grain and the high level of fluctuations in yield indicators do not have a positive effect on the country’s economy. For example, the wheat production in the Altai, Novosibirsk, and Omsk regions of the Siberian Federal District is presented in Table 1.

Table 1. Placement of spring wheat by federal districts of the Russian Federation.

| Federal districts | 2001-2005 | 2006-2010 | 2011-2015 | 2016-2017 |
|-------------------|-----------|-----------|-----------|-----------|
|                   | Thous. ha | %        | Thous. ha | %        | Thous. ha | %        | Thous. ha | %        |
| Spring wheat sown area |         |          |           |          |           |          |           |          |
| Russia            | 15094.2   | 100.0    | 14220.1   | 100.0    | 13169.2   | 100.0    | 13318.5   | 100.0    |
| Central           | 455.2     | 3.0      | 568.6     | 4.0      | 446.6     | 3.4      | 615.7     | 4.6      |
| Northwestern      | 52.1      | 0.3      | 42.4      | 0.3      | 45.0      | 0.3      | 69.4      | 4.6      |
| Southern          | 243.4     | 1.6      | 155.7     | 1.1      | 110.4     | 0.8      | 204.0     | 0.5      |
| North Caucasus    | 18.7      | 0.1      | 11.9      | 0.1      | 6.7       | 0.1      | 5.7       | 1.5      |
| Volga             | 4862.2    | 32.2     | 4137.2    | 29.1     | 3751.9    | 28.5     | 3738.9    | 0        |
| Ural              | 2141.4    | 14.2     | 2387.2    | 16.8     | 2391.3    | 18.2     | 2355.9    | 28.1     |
| Siberian          | 7196.7    | 47.7     | 6760.0    | 47.5     | 6296.0    | 47.8     | 6184.0    | 17.7     |
| Far Eastern       | 124.6     | 0.8      | 157.1     | 1.1      | 121.3     | 0.9      | 144.7     | 46.4     |
|                   |           |          |           |          |           |          |           |          |
| Gross harvest of spring wheat |         |          |           |          |           |          |           |          |
| Russia            | 20171.1   | 100.0    | 19684.9   | 100.0    | 17451.0   | 100.0    | 22496.5   | 100.0    |
| Central           | 829.8     | 4.1      | 1046.1    | 5.3      | 1029.7    | 5.9      | 1968.3    | 0        |
| Northwestern      | 73.8      | 0.4      | 70.7      | 0.4      | 105.5     | 0.6      | 150.0     | 8.7      |
| Southern          | 276.7     | 1.4      | 115.0     | 0.6      | 117.2     | 0.7      | 357.5     | 0.7      |
| North Caucasus    | 28.1      | 0.1      | 24.1      | 0.1      | 12.9      | 0.1      | 15.2      | 1.6      |
| Volga             | 6827.1    | 33.8     | 5242.9    | 26.6     | 4611.8    | 26.4     | 6359.6    | 0.1      |
| Ural              | 2755.7    | 13.7     | 3192.5    | 16.2     | 3174.1    | 18.2     | 4020.2    | 28.3     |
| Siberian          | 9245.0    | 45.8     | 9792.1    | 49.7     | 8197.7    | 47.0     | 9328.0    | 17.9     |
| Far Eastern       | 134.8     | 0.7      | 201.5     | 1.0      | 202.1     | 1.2      | 297.7     | 41.5     | 1.3

Located in the steppe zone, the Altai and Omsk regions are the largest producers of spring wheat in the country. They have the highest coefficient of specialization (more than 7.0) and produce over one ton of this grain crop per capita. These regions, which have a relatively large potential to meet their own needs in wheat, can provide tangible and quick returns in building up relatively cheap commodity resources of high-quality wheat, increasing its supplies to the domestic and foreign grain markets. Favorable soil and climatic conditions in the territory of Western Siberia allow us to consistently receive high grain yields of strong and hard spring wheat varieties with minimal production costs. Despite all the potentials of the above regions, a slow but steady decline in the area under spring wheat has been observed here over the past two decades. The reduction occurs in the conditions of production of low-quality grain and unstable yield, fluctuations of which from year to year range from 8.7 to 19.3 c / ha.
The country has significant genetic and natural resources, including fertile chernozem soils, which enable stably to obtain grain of hard and strong wheat. But at the same time, the production of wheat classes 1 and 2 is 2%, and the class 3 occupies 20% of its total production (Table 2). At the same time, the 4th wheat class makes up most of its marketable volume, which significantly reduces the competitiveness of -Russian wheat on the world market and the level of export revenues.

Table 2. The efficiency of wheat production, depending on its quality in the agricultural organizations of the Russian Federation.

| Indicators                  | Share in implementation, % | Total cost, rub. / t | Selling price, rub. / t | Profit, rub. / t | Profitability % |
|-----------------------------|----------------------------|----------------------|-------------------------|------------------|-----------------|
| 2001-2005                   |                            |                      |                         |                  |                 |
| Wheat, on average           | 100.0                      | 1584                 | 2062                    | 478              | 30.2            |
| Out of this: 1-2 classes    | 2.0                        | 1670                 | 2488                    | 818              | 49.0            |
| 3 class                     | 21.0                       | 1707                 | 2215                    | 508              | 29.7            |
| 4 class and fodder          | 77.0                       | 1549                 | 2011                    | 462              | 29.8            |
| 2006-2010                   |                            |                      |                         |                  |                 |
| Wheat, on average           | 100.0                      | 3179                 | 4038                    | 859              | 27.1            |
| Out of this: 1-2 classes    | 1.8                        | 3366                 | 4431                    | 1065             | 31.7            |
| 3 class                     | 18.9                       | 3326                 | 4422                    | 1096             | 33.0            |
| 4 class and fodder          | 79.3                       | 3140                 | 3937                    | 797              | 254             |
| 2011-2015                   |                            |                      |                         |                  |                 |
| Wheat, on average           | 100.0                      | 5097                 | 6756                    | 1659             | 32.5            |
| Out of this: 1-2 classes    | 1.8                        | 5318                 | 7171                    | 1853             | 34.8            |
| 3 class                     | 21.5                       | 5135                 | 6994                    | 1859             | 36.2            |
| 4 class and fodder          | 76.7                       | 5081                 | 6136                    | 1598             | 31.4            |

Due to the insignificant differentiation of prices for wheat grain by classes, its producers have no economic interest in producing high quality grain. Also, seasonal and, to a large extent, annual fluctuations in the prices of wheat grain overlap the value parameters of the quality of its grain and thus do not stimulate the production of quality products. The difference in the level of profitability of wheat of the first and second classes if compared with its grain of the third class was only 1.4 percentage points, and it was 3.4 percentage points with the fourth class and feed wheat in 2011-2015.

The natural potential of the regions of Western Siberia is able to ensure the effective functioning of the production of spring wheat in a country with high quantitative and qualitative characteristics of grain. The solution to this problem is possible by creating in these regions of Siberia a high-tech specialized zone for the sustainable production of hard and strong varieties of spring wheat using environmentally friendly and resource-saving technologies. In this regard, the use of the genetic potential of this spring crop is the most justified and least costly factor in expanding the production of spring wheat with a stable level of yield and high-quality grain. The seed growing as one of the safest ways to intensify the production of spring wheat is a biological factor in its effective functioning. It is seed production that makes it possible to expand crops under varieties of spring crops, oriented towards probable changes in weather conditions that are resistant to pests and diseases [1]. Improving the quality of grain through targeted breeding is the cheapest and most affordable way to improve the efficiency of spring wheat production in the regions of Siberia.

Sustainable and dynamic functioning of the production of spring wheat in the regions of Western Siberia is possible through the formation of a single large-scale specialized zone in the Altai, Novosibirsk and Omsk regions, with an increase in the volume of marketable grains of hard and strong varieties of spring crops. At the same time, the national interests of the state should take into account the potential growth of the regions-members of the specialized zone, moving into the direction of developing competitive production of high-quality spring wheat grain and increasing its export resources to the countries of the Asian continent. When forming the West Siberian specialized zone, the
The following actions are necessary:

- Considering and analyzing the already established level of distribution and specialization of wheat production, the degree of concentration of spring crops in these regions, taking into account all factors affecting the production process, including soil-climatic and socio-economic;
- Assessing the production potential of the regions, taking into account its capabilities for the storage, processing, and sale of wheat grain and finished products from it, comprehensively assessing the current state of the material and technical base and vehicles, transportation distances, and taking into account the cost of logistics;
- It is also necessary to substantiate the interregional exchange of each region, taking into account its capacity for export and the volume of wheat exports based on the calculation of the indicator of its production per capita, and the level of interregional specialization is to be defined as the volume of export of wheat on interregional exchange to the total volume of its production;
- Making a feasibility study of the project, to comprehend and evaluate the results in the final positive version of its intended justification for locating wheat production with the maximum concentration of spring crop crops in these regions, taking into account all sorts of risks and threats;
- Motivating options to intensify the production of spring wheat in order to achieve high yield and grain quality, increasing its commodity resources and increasing production sustainability.

Introducing economically viable innovative technologies, using the achievements of scientific and technological progress, ensuring the ecological balance in the cleanest regions of Russia will contribute to the rational use of production resources and the bioclimatic potential of the territory, reproduction of soil fertility, improvement of the quality of spring wheat grain and the environmental safety of the final products, which today is especially expensive in the modern world.

The creation of the West Siberian specialized zone for the sustainable production of hard and strong spring wheat will open up a significant potential for increasing the capacity to export competitive grain to nearby countries of the Asian continent. Currently, trade with China is carried out through Kazakhstan, within the framework of the Eurasian Economic Union [1]. In modern economic conditions, in conditions of ever-increasing tough competition between states and unstable political equilibrium in the world, we need to eliminate any one-sided dependence of the country in addressing the sustainable development of cross-border regions, ensuring economic interests and the national security of the state as a whole.

4. Discussion

The issues of transition to the export-oriented model of agricultural development in the country based on the rational and effective use of the potential of the regions, ensuring sustainable production and high quality of the final product, its competitiveness in world markets are actively discussed in the works of A. I. Altukhov [2], G. V. Bespakhotnyy [3], E. N. Krylatyk [4], A. G. Paptsov [5], I. G. Ushachev [6], and others.

It can be stated that the conducted scientific research allowed to summarize a part of the empirical data on the prospects for the formation and development of a rational and efficient location of the production of strong and hard spring wheat in the border regions of the country and its export to nearby countries of the Asian continent. The strategic role of creating a single specialized area for the production of spring wheat in the regions of Western Siberia is not only in building high quality commercial grain and its competitive export to the countries of the East. The creation of a single specialized area for the production of spring wheat in the regions of Western Siberia is also a fundamental basis for the development of the national territory and the cross-border regions of the country.
5. Conclusion
The formation of a large-scale specialized zone in the border regions of Western Siberia must rely not only on increasing the production of hard and strong spring wheat as a raw material resource of the country, but also on transport and logistics opportunities. These opportunities are opened when servicing infrastructure and engineering structures, accompanied by international transport corridors to the countries of the Asian continent. Such strategic points of growth will have a significant positive impact on the regions’ cross-border cooperation. This is a complex of trade, economic and investment partnerships using opportunities to create the most favored conditions for the passage of products at the border.

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