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Export potential of the regional grain sector

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Abstract. The relevance of the article is due to the need to improve the efficiency of regional grain sectors on the basis of the export potential in conditions of fierce competition in the global grain market. The purpose of the article is to develop recommendations to increase the export potential and implement competitive advantages of the grain production industry based on an analysis of the current situation and identification of market infrastructure development trends in Russian regions. The study identifies development trends and justifies priority measures for the implementation of the export grain product potential at the regional level. The article presents results of the analysis of development of the grain production industry in Russia and the Republic of Tatarstan, reveals grain market development, competitive advantages of regional producers, identifies systemic problems and directions for increasing the export potential of regional grain product sub-complexes. The theoretical provisions and practical recommendations can be applied in research on the problems of development of the agricultural business, scientific substantiation of the main directions, methods and mechanisms for implementing the food policy.

1 Introduction

The grain sector of Russia is one of the sectors of the domestic economy where significant export potential has developed. Over the years, significant indicators of grain exports have been achieved. It occupies a leading share in Russian food exports. Along with this, the grain industry satisfies the demand for grain by at least 95 % due to the domestic grain market [1, 2]. These tasks can be accomplished by bringing the grain industry to the forefront based on the effective management of grain production, storage and processing. In the market economy, the urgent tasks are to achieve a leading position in the market, find the most favorable conditions for the production and sale of products. Success is achieved by those companies whose products are more competitive. However, the strategic importance of the economic potential requires a review of the export structure, a shift in the share distribution of exported goods from raw materials to products of deep industrial processing [3, 4]. In this regard, the identification of the export grain product potential and priorities for the development of the grain market is of great economic importance.

2 Materials and Methods

The theoretical and methodological base of the study is the possibility of interaction and complementarity of the fundamental principles and concepts of the economic theory. The theoretical and methodological basis is works by foreign and domestic agricultural economists on the issue under study, the regulatory and legislative acts of the Russian Federation on the food policy, materials from international and all-Russian scientific and practical conferences.

The general methodological basis is a system analysis. The materials used and their diversity required the use of various approaches, methods and techniques for the study of socio-economic processes: constructive, deterministic, retrospective, dynamic, statistical.

The methods aimed to reveal the trends of development of the food policy and their features are as follows: monographic, abstract-logical, computational-constructive, economic-statistical, analogies.

The information and factual basis of the study is official data of the Federal State Statistics Service, the Ministry of Agriculture, the Ministry of Agriculture and Food of the Republic of Tatarstan, planning and reporting documents of agricultural organizations, monographs, dissertations, reports of research institutes, conference materials, expert evaluations, data obtained during the author's analysis and calculations.

3 Results

The development of the grain product sector is a fundamental condition for the effective functioning of agriculture and the agro-industrial system of the country. Full satisfaction of the needs of the population depends on the level of development of the grain industry. To meet the domestic needs of agricultural enterprises, farms and peasant farms with grain, formation of a food fund and development of the export potential, the

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volume of grain production in Russia should be at least 100-120 million tons per year [5]. In this regard, the strategic directions of development of grain production are creating emergency reserves (food for the population, feed for livestock, raw materials for processing and food enterprises) and increasing the national export potential in the world food market [6]. The main indicators of the grain sector of the Russian Federation are presented in Table 1.

Table 1. The volume of production and use of grain in the Russian Federation, million tons [6].

Parameters	2011	2012	2013	2014	2015	2016	2017	2018	2019
Production (gross yield in weight after processing)	94.2	70.9	92.4	105.2	104.7	120.7	135.5	113.3	121.2
Production consumption	20.9	20.5	20.0	20.9	20.9	22.3	24.4	23.2	23.8
in % to the production volume	22.2	28.9	21.6	19.9	20.0	18.5	18.0	20.5	19.6
Processed for flour, cereals, animal feed and other purposes	47.4	43.8	44.5	46.4	48.1	51.8	53.4	52.5	53.0
in % to the production volume	50.3	61.8	48.2	44.1	45.9	42.9	39.4	46.3	43.7
Exports	18.3	22.5	19.0	30.1	30.7	33.9	43.3	54.8	39.3
in % to the production volume	19.4	31.7	20.6	28.6	29.3	28.1	32.0	48.4	32.4

The volume of grain production has been steadily growing. If we compare the average annual indicators of the last three years (2017–2019) with the indicators at the beginning of the decade (2011–2013), an increase in the production volume was 44 %, production consumption of agricultural products increased by 3.3 million tons, or 16 %, including seeds – by 0.6 million tons and animal feed – by 2.7 million tons, respectively. 45.2 million tons and 53.0 million tons were used for processing during the same periods, with an increase of 7.8 million tons (17.3 %).

With an increase in production, their share in the gross grain harvest decreased It increased from 72.5 % in 2011 to 63.3 % in 2019. Sustainable development of the grain production industry over the past decade has satisfied domestic needs for grain products and contributed to the growth of grain exports. The development of the grain sector follows the path of intensification of the industry due to changes in the structure of the national economy, increased government support for the agricultural sector and attraction of the private investment.

As a result, in recent years there has been a significant increase in productivity, due to which the average annual gross grain harvest amounted to 119.1 million tons in 2015–2019. An analysis of the dynamics shows that the production of grain and leguminous crops increased from 65.4 million tons in 2000 to 121.2 million tons in 2019. The wheat volume in 2019 amounted to 61.3 % with a gross yield of 74.3 million tons [7]. The twofold increase in production volumes allowed us to increase the national grain export potential and gain our niche in the world food market.

However, in the conditions of fierce competition in the international grain market, regional food sectors set ambitious tasks associated with the development and strengthening of the export component. In the passport of the regional project "Development of the ex-port in the Republic of Tatarstan for the period 2019–2024", the Republic of Tatarstan sets the goal to export grain in the amount of $ 21.4 million by 2024. For the period from 2013 to 2020, in the Republic of Tatarstan, grain production was the main direction in crop production, stable growth of this industry was planned (Fig. 1) [8].

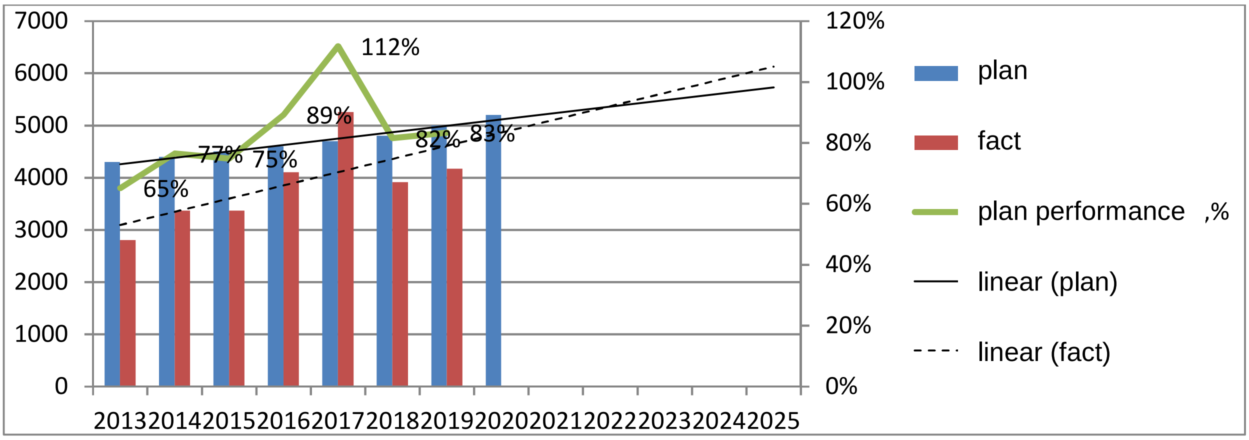

Fig. 1. Dynamics of the development of grain production in the Republic of Tatarstan

The data indicate that the targets for grain production have been achieved only 65–90 %, with the exception of 2017, when the target was achieved 111.7 %. At the same time, it should be noted that during the analyzed period there is a general tendency to increase production. If in 2013–2015, the production volume did not exceed 3400 thousand tons, over the past four years more than 4000 thousand tons of crops have been produced. In 2019, 4,521 thousand tons of grain were harvested from the fields of the Republic of Tatarstan, which is 15.4 %

more than in 2018. An increase in the grain production volume was achieved due to the increase in productivity by 15.3 % while reducing the harvesting area by 0.9 %. The average yield of grain crops amounted to 28.6 centners per hectare of the harvested area. The current trend line shows that the trend of increasing production volumes in the near future will continue and the production volume will exceed 5,000 thousand tons. The basis for maintaining this prospect can be innovative technologies. In the republic, the main producers of marketable grain are large agricultural organizations,. They should be considered as the main players in the domestic and foreign grain markets; they determine the export potential of the republican grain sector (Table 2) [8].

Table 2. The average balance of grain production of large agricultural enterprises of the Republic of Tatarstan o for 2017-2019, thousand tons [8]

Name of the product	Produced (in weight after processing)	Costs				Surplus	
		Internal needs	Other costs	Total	in % to the production volume	For sale	in % to the production volume
Cereals and legumes, including corn for grain	3 323.3	1 266.9	243.8	1 510.8	45.5	1 812.5	54.5
including: wheat grain (winter and spring)	1 635.2	451.3	102.4	553.7	33.9	1 081.5	66.1
of: food wheat (1–2 cl.)	12.4	2.5	0.1	2.6	20.6	9.8	79.4
food wheat (3–4 cl.)	457.0	66.2	13.7	79.9	17.5	377.0	82.5
corn grain	196.1	108.3	29.6	137.9	70.3	58.2	29.7
barley grain (winter and spring)	937.9	395.3	76.6	471.9	50.3	466.0	49.7
grain and seeds of other grain crops (winter and spring)	424.4	232.9	27.8	260.8	61.4	163.6	38.6
grain and seeds of other leguminous crops	129.7	79.2	7.4	86.6	66.8	43.1	33.2
Soya beans (soya)	3.3	1.1	0.1	1.2	35.8	2.1	64.2

The analysis of production volumes and directions of grain use shows that the republic has significant export potential. Almost half of the grown crop is sufficient to meet their internal needs, and 750 to 1000 thousand tons of grain are produced annually to meet the domestic needs of the republic by small businesses. 1,500–1800 thousand tons of grain, including 1000 thousand tons of wheat, as the main marketable product, remain in the free balance for sale.

An analysis of the use of the export potential of the Republic of Tatarstan and comparison with other regions showed that quantitative and monetary volumes are not high (Table 2).

Table 3. Indicators of wheat exports from Russia and regions, thousand tons [9].

Region (exporter)	Indicator	Years					2018 in % to the Russian average
		2014	2015	2016	2017	2018	
Total in Russia	Wheat, thousand tons	22084.0	21230.7	25327.9	33 026.0	43965.6	100.00
	Cost, million dollars	5410.0	3947.7	4216.0	5791.0	8432.5	100.00
	Price of one ton, dollars	245.0	185.9	166.5	175.3	191.8	100.00
Rostov region	Wheat, thousand tons	4585.3	6672.3	8522.3	11844.1	17723.2	40.31
	Cost, million dollars	1039.7	1167.0	1350.6	2029.9	3423.6	40.60
	Price of one ton, dollars	226.7	174.9	158.5	171.4	193.2	100.73
Krasnodat region	Wheat, thousand tons	5787.4	3497.1	5518.1	6184.0	8708.1	19.81
	Cost, million dollars	1439.4	659.5	927.7	1094.3	1738.1	20.61
	Price of one ton, dollars	248.7	188.6	168.1	177.0	199.6	104.70
Republic of Tatarstan	Wheat, thousand tons	0	6.0	0	12.8	36.6	0.08
	Cost, million dollars	0	1.1	0	1.8	5.1	0.06
	Price of one ton, dollars	0	180.1	0	142.8	140.2	73.10

The share of the Republic of Tatarstan in Russian exports is less than 1 %, and the export price is 26.9 % or 51.6 dollars lower than the national average and even more in comparison with the southern regions (Rostov and Krasnodar regions), which export 60 % of the total grain volume. It is very difficult to gain a niche in the international grain market.

The competitiveness of the grain industry is characterized by individual costs per unit of production, quality indicators, as well as the volume of market capacities. The market demand determines market prices, which determine the efficiency of the grain industry. The results of our research indicate that in the Republic of Tatarstan the volume of grain production and the level of productivity for 2014–2018 increased by 8.7 and 14.8 %, respectively.

At the same time, the sales volume increased by 44.4 %, the level of marketability – by 15.1 %. The profitability of grain sales in 2014 was 8.8 %, and the profitability of sold products was 9.9 %. By 2018, the values of these indicators increased by 1.8 and 2.0 %, respectively. The current market conditions played a

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stimulating role for grain producers. Nevertheless, the problem of its transformation into high-margin products for agricultural producers has not yet been completely resolved. Grain exports cannot solve this problem (Table 4).

Table 4. Profitability of grain exports by Russian regions, rubles per one ton [10].

Region	The current price of wheat in the domestic market	Logistic costs (including elevator services, railway transportation and port charges)	Estimated shipping price	Export price	Income
Krasnodar region	12200	2168	14368	14249	-119
Stavropol region	11900	2334	14234	14249	15
Rostov region	11800	2334	14134	14249	115
Voronezh region	11000	2836	13836	14249	413
Kursk region	10900	3023	13923	14249	326
Volgograd region	11000	3070	14070	14249	179
Republic of Tatarstan	10750	3473	14223	14249	26
Omsk region	10000	4360	14360	14249	-111
Novosibirsk region	9800	4518	14318	14249	-69

In modern economic conditions, the infrastructure for the effective functioning of the domestic and foreign grain markets has not yet been formed – market institutions, the competitive environment, logistics systems are underdeveloped, a rational combination of market mechanisms with state regulation is being sought, and conditions for marketing products have not been created.

According to experts, the grain market is becoming more local due to the constant growth of railway tariffs and an increasing share of transport costs in the price. This is confirmed by the fact that in 2018 the Republic of Tatarstan exported 36.6 thousand tons of wheat at a cost of 140.2 dollars per ton, but the cost of railway transportation from the regional railway terminal to Novorossiysk amounted to $ 41.7 per ton, that is, 30 % of the sale cost [11]. Thus, wheat exports turns out to be unprofitable, and without solving the systemic problems, it is not possible to fully implement the export potential of the regional grain product sector.

The systemic problem of the agricultural producer remains one of the main ones. The survey results showed that the bulk of producers (67 %) are engaged in the search for buyers of marketable grain on their own. Most farms (61 %) sell grain in autumn [12]. This leads to a chaotic flow of marketable grain through intermediaries at bargain prices to the detriment of agricultural producers. An example is 10.7 million tons of grain exported by Moscow and St. Petersburg in 2018, where grain is not produced [13]. The government should use the mechanisms of procurement and intervention to ensure the rapid development of the market infrastructure on the basis of public-private partnerships.

4 Conclusion

The most important factor in increasing the export potential of the regional grain sector is liquidity of products and a gradual increase in the export demand from the main importers of Russian grain. The systemic problems of efficient use of the export potential are the limited range of export grain products, the insignificant volume of exports of grain processed products, and the limited geography of grain exports. Important systemic problems are traditionally low export prices compared to other countries and consumer properties of exported grain. A significant obstacle to improving the efficiency of regional grain exports is the underdeveloped market infrastructure, the technical condition and the volume of capacities for storing grain that does not meet current requirements, and the level of development of the transport infrastructure that does not meet the needs of growth in the grain market turnover. The agricultural policy, activities of agricultural businesses should be aimed at overcoming these trends through the development of agri-food markets, effective sustainable agricultural production, and implementation of the export potential.

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