

FaR 2021**International Forum “Freedom and responsibility in pivotal times”****SOCIO-ECONOMIC PROCESSES IN THE MODERN AGRO-INDUSTRIAL COMPLEX: EXPERIENCE OF TATARSTAN**

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Abstract

The paper considers the agricultural experience of one of the leading regions of the Russian Federation – the Republic of Tatarstan. The study revealed that the region has favorable climatic conditions, geographical location, extensive land resources, developed transport system, and high scientific and personnel potential. Over the past years the republic has been one of the main suppliers of agricultural products in Russia. The agricultural producers in the region are both large agricultural holdings, which account for dozens of thousands of hectares of land, as well as small commodity producers, peasant farms. The key vectors of the crop production development in the republic include biologization, production of environmentally friendly products, “green” technologies; in animal husbandry – breeding animal husbandry, digitalization, construction of new modern complexes, Digital technologies are being introduced in the agricultural sector at a significant pace. Tatarstan successfully implements the latest achievements of science and technology, expands the export orientation and assortment of agricultural products on the world market focusing on halal products. The analysis revealed the weaknesses and strengths of the agricultural sector, the opportunities and threats of its further development. They must be taken into account in building sound agri-food policies. The investment reliability and attractiveness of the republic, the dynamism of development, political stability are factors contributing to the development of a competitive agricultural sector designed to achieve high production rates and ensure food security both in the region and in the country as a whole.

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Keywords: Agricultural sector, funding, export, scientific potential, agricultural holding, digitalization



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1. Introduction

The Republic of Tatarstan is a successfully and dynamically developing region of the Russian Federation. The republic has great economic potential and developed human capital. The republic has created comfortable conditions for business. The investment reliability and attractiveness of Tatarstan is growing every year. The republic has always been characterized by domestic political stability and dynamic development. The unquestionable advantages of the region include the advantageous geographical location, large natural resource stocks, highly skilled personnel, strong scientific potential, developed transport system (Gatina, 2017). The republic has railway and motor roads with a length of 1.9 and 12.0 thousand km, respectively, 3 operating airports, two of which are international federal airports. Tatarstan is geographically favorably located – at the confluence of the two largest rivers the Volga and the Kama. Other large rivers flow through the territory of the republic (Vyatka, Belaya, etc.). All this allows actively developing and using water transport on rivers. The region’s water resources are the most important energy sources, resources for the sectors of the economy. The combination of favorably developing natural-climatic and economic factors contributes to the functioning of Tatarstan as a highly competitive and stable developing region.



Figure 1. Contribution of the Republic of Tatarstan to the economy of the Russian Federation

In recent years the republic has firmly taken a leading position among the constituent entities of the Russian Federation in a number of main macroeconomic indicators. According to the 2020 results, the republic holds the 6th place in terms of the share of gross regional product among the constituent entities of the Russian Federation, which is 2.9%; as for agriculture and industrial production – 4th place (4.3 and 4.1%, respectively); investments – 6th place (3.0%).

2. Problem Statement

Currently, the republic is an important economic entity of the Russian Federation, one of the three largest suppliers of agricultural products in the country (Klychova et al., 2020). Hence, agricultural production occupies a significant place among other sectors of the economy.

Recent changes also affected the agrarian sphere: business recession, substantial diminution in demand and supply for goods and services, loss of trade and commercial ties and others caused by the spread of a new coronavirus infection led to negative socio-economic losses both in the country's economy and in the region.

However, timely measures taken by the government of the country and the republic to support business and the population in the current conditions made it possible to largely mitigate the negative socio-economic consequences.

3. Research Questions

About 8 million hectares of land are used in the agriculture of Tatarstan, which is about 2.2% of the total farmland area in the country. The industry employs 10% of the working-age population of the republic. Agricultural products account for 12% of the gross regional product. In 2020, agricultural producers of the republic made products worth 263.4 billion rubles (104% of the 2019 level).

According to the results of the last year, the republic made a record high crop yield over the past dozen years – more than 5.5 million tons of grain. Compared to the previous year, the increase was 23.1%. Beet growers of the republic collected 2.2 million tons of sugar beets. The region produced 326 thousand tons of vegetables, 1.2 million tons of potatoes. In general, in 2020 the cost of crop production in comparable prices amounted to 135.5 billion rubles, which is 106.6% of the previous year.

Currently, the issues of organic agriculture, the production of environmentally friendly products, and digitalization are actively being resolved in crop production. In the crop production the republic puts a lot of efforts to improve land fertility, crop rotation, introduce mineral and organic fertilizers, and use high-yielding varieties adapted to dry conditions.

Animal husbandry is also being successfully developed in the region. The livestock industry of the republic relies mainly on cattle breeding. Tatarstan has been holding the top position in milk production for more than one year ranking first among the regions of the Russian Federation. The gross milk yield over 2020 amounted to more than 1.9 million tons of milk (102.1% of the last year). Enterprises of the republic produced 528.6 thousand tons of livestock and poultry meat live weight, 1,475.4 million eggs. In general, the value of livestock products produced at comparable prices amounted to 127.9 billion rubles (an increase of 6.6% compared to 2019). Subclusters (dairy, meat, aquaculture) have been created and successfully operate in the republic to increase the profitability of livestock production. Tatarstan is actively engaged in the breeding animal husbandry. There are enterprises in each administrative region of the republic that raise different breeding cattle. They are able to provide enterprises in the region with animals with high genetic potential. New livestock complexes are being built in the republic in the innovative conditions. In 2020, 16 livestock farms and complexes were built that accommodate 6.4 heads of cattle. According to experts, the construction of new, modern complexes will increase the annual milk production by 2-3%.

The region is actively promoting its products into the distribution network. The republic has two electronic retail spaces that sell Tatarstan agricultural products. Surplus products are purchased from the population through the Tatpotrebsoyuz, which are subsequently sold on agricultural farms and through the retail network of this organization.

The favorable investment climate of the republic contributes to large investment projects for advanced processing of products. This will strengthen the position of Tatarstan both in the domestic and foreign markets, and increase its export potential.

The availability of water resources allows the agricultural sector of the republic developing its aquaculture: to breed salmon fish, create farms for their processing, etc.

The dynamics of regional development indicators is influenced by many factors: the state of the investment environment, the availability of equipment, the level of human capital development, the activity of economic entities, etc. The level of scientific potential also has a significant impact (Gudyaeva, 2020).

Over the past decade, the level of costs for scientific research in the republic has increased several times and has now amounted to 18 billion rubles. Tatarstan is one of the three leaders (after Moscow and St. Petersburg) in the ranking of innovative regions (Koba et al., 2020). The republic has a high scientific potential. More than 13 thousand staff members are engaged in scientific research in the region. The R&D institutional structure includes about four dozen research institutions, 36 universities, 21 research institutes, etc. The republic has created all the conditions for the successful implementation of scientific developments: a well-developed innovative structure, a system of technological clusters, two special economic zones. A world-class scientific center is being created as part of the Science national project. The flagship center of the Innopolis University fosters the development of programs and training of specialists in the field of IT technologies and digital economics. A strong scientific and technical potential is one of the main competitive advantages of Tatarstan (Kirillova et al., 2020).

The analysis of the state of technical equipment of agricultural enterprises of the republic shows that the energy capacity of the industry is declining. Despite this, over the past five years the level of energy supply has increased by 14.3% and amounted to 147.8 hp, energy weapons, respectively, by 44.9% and 93.9 hp. The growth of these indicators is caused by a decrease in the area of cultivated land and a decrease in the number of workers employed in the industry. There is a reduction in the number of all types of equipment. The bulk of the equipment used is very worn out, mentally and physically obsolete. Most of them are operated beyond their service life. Most agricultural enterprises do not have the opportunity (due to the lack of free financial resources) to purchase new equipment (Vodyannikov & Subaeva, 2020). The machinery fleet is renewed mainly at the expense of borrowed funds, leasing, which further increases the loan debt burden of enterprises. The government of the republic is taking certain steps in this direction, in particular, subsidizes the purchased equipment under the “40x60” program. However, these measures are not yet enough to improve the technological infrastructure.

The agricultural sector of Tatarstan is characterized by a combination of small peasant farms and large agricultural holdings (Gazetdinov et al., 2019). One of the major agricultural holdings of the crop industry is TK Maisky, which accounts for more than 90% of indoor vegetables produced in the republic. There are also some large agricultural holdings in animal husbandry. For example, in dairy cattle breeding this is Just Milk holding company, Agrosila holding company, Ak Bars holding company, in pig farming – Kamsky Bacon LLC, in poultry farming – Yaratel and Chelny Broiler poultry farms. The Chelny Broiler poultry farm produces more than 65% of poultry meat of the total amount of products in Tatarstan. It is one of the ten largest poultry enterprises in the country.

One of the leading producers of livestock products of Tatarstan and the Volga region as a whole is Agrosila Holding. The holding includes twenty-three enterprises. The holding carries out its activities in ten areas: from the production and processing of agricultural products to the service and maintenance of agricultural machinery. The number of employees in 2020 was more than 8,700 people. The proceeds in cash of the agricultural holding in 2020 amounted to 46.5 billion rubles.

The experience of Just Milk holding company is quite interesting. It has a complete cycle of milk production and sale – from the farm to the delivery of finished products. The company has its own land areas, its own livestock complexes, and its own dairy plants. It is the main supplier of dairy products to retail chains.

The data show a strong degree of consolidation of a number of agricultural sectors in the region (vegetable growing, meat cattle breeding and poultry farming).

Digitalization processes are gaining momentum in the agricultural sector of the republic, as in other sectors of the economy. The objective prerequisites for digitalization of the industry are the diversity and complexity of production processes, dependence on natural and climatic conditions, territorial expanse and others. Digitalization of the industry ensures interaction between product manufacturers, supervisory bodies and industry departments for the purpose of information exchange, provision of public services and interdepartmental interaction (Dyachenko, 2021).

Tatarstan is the leader in the introduction of digital technologies in agribusiness among the regions of the Russian Federation. The republic is quite successful in the categorization of fields (Loginov et al., 2020). A system of space monitoring of agricultural lands is being introduced. In 2020 alone the use of the system made it possible to identify 5.5 thousand hectares of wasteland, 20 thousand hectares of land with non-target objects. Forested land on the area of 18 thousand hectares was recognized. Digital technologies are being actively introduced in animal husbandry. Last year, as part of the unified animal identification the republic began the chipping of animals. Herd management and animal feeding programs are being introduced at the enterprises of the region. Tatarstan is implementing a project on feeding centers. About 50 feeding centers will be commissioned as part of this project.

One of the systemic IT companies of the republic Bars Group is implementing a digital portfolio pilot project called Agriculture, which includes the following platforms: Digital Veterinary Medicine, Veterinary Supervision, Digital Subsidies, Electronic Rural Household Register, Agricultural Monitoring, etc. Each platform covers a specific area of activity. For example, Agricultural Monitoring is a single information space for monitoring the activities of territorial agricultural departments and creating general reporting in accordance with the federal legislation and the peculiarities of the regional policy. The platform has the following advantages: rapid collection and analysis of information for the development of targeted programs and projects; organization and monitoring of measures to ensure the quality and safety of agricultural products, raw materials and food; prompt and reliable information from peasant farms and investors, etc. According to the company's experts, the introduction of digital platforms will optimize the material resources necessary for the implementation of the state agricultural policy, switch to the processing of veterinary accompanying electronic documents, as well as simplify the work of ordinary specialists and industry leaders (Sitdikov et al., 2019).

Despite the positive aspects of this process, the main obstacles to the introduction of digital technologies in agribusiness include lack of personnel experienced in modern IT technologies, high cost and lack of financial resources, low level of coverage of rural areas with digital technologies, and others.

The export of agricultural products of the republic is relatively small, but there is an upward trend. Tatarstan exports plant products, such as cereals (wheat, rye, barley), derivative products (coarse flour, malt). These products are exported to Iran, Georgia, Belarus, and Azerbaijan. The main countries of livestock export are Kyrgyzstan, Kazakhstan, Belarus, which buy poultry, eggs, milk and oil from the republic. Besides, the region exports oil and fats to Turkey, Egypt, Germany.

According to the experts of the Ministry of Agriculture of the republic, in 2020 the republic fulfilled its export target of agricultural products by slightly more than half of the planned values (by 52%) and amounted to 165.4 million dollars. The restrictions imposed due to the spread of the coronavirus infection had a negative effect. Despite this, there was an increase in exports compared to the previous year by 73.8 million dollars or 80.6%.

In increasing the volume of exports of agricultural products the republic puts emphasis on the expansion of halal products (Nabieva, 2018; Tarasov & Ivoilova, 2018). The Center for Islamic Economy has been established and operates in the republic. Tatarstan is persistently studying the international halal standards. Halal exhibitions are held annually. Halal products of the region are presented at many international and national agro-exhibitions. Currently, the volume of Tatarstan halal production is estimated at 7 billion rubles. There are about 50 enterprises that produce halal products, of which 18 companies are focused on export, including 5 companies that have the international halal certificate. According to ambitious forecasts, by 2024 regional producers plan to increase the export of halal products by more than 2 times compared to 2020. Thus, Tatarstan has every chance to become an advanced region of the Russian Federation for the production and sale of halal products.

The performance of the agricultural sector to a large extent depends on the level of state support and financing of the industry. The overriding priority of the regional economic policy is budget financing of the industry (Samygin & Kudryavtsev, 2018). The distinguishing features of the region in modern conditions include the high level of financial support for the agricultural sector (Zakharova, 2019). However, it should be noted that state support and financing of the industry have been unsustainable in recent years. For example, in 2015 the volume of financing of the industry amounted to 7.1 billion rubles, in 2016 – 6.1 billion rubles, by 2020 the value increased to 16.4 billion rubles, in 2021 it is expected at the level of 12.7 billion rubles. Despite this, this is not enough. In our opinion, the low level of public funding is a consequence of the state policy. Agricultural producers have many questions and complaints about preferential loans.

4. Purpose of the Study

The purpose of this study is to analyze and summarize the positive experience of the agricultural sector of the republic for further use in other constituent entities of the federation.

5. Research Methods

The study utilized the materials of the state statistical bodies (State Statistics Committee of the Russian Federation and the Republic of Tatarstan), data from the Ministry of Agriculture and Food of the Russian Federation and the Republic of Tatarstan and a number of other sources of information. Laws and legal acts were also studied. The collection and analysis of information was carried out using various methods and techniques, namely, balancing, monographic and other methods.

6. Findings

Thus, the studies show that the agricultural sector of the Republic of Tatarstan has both strengths and weaknesses.

The analysis of the republic's agriculture revealed the following strengths:

- huge land resources, which is favorable for the cultivation of a large range of crops and is characterized by a high level of fertility, ensuring, all other things being equal, high yields;
- sufficient water resources that can be used for agricultural production;
- advantageous geographical location fostering the development of the transport system;
- high scientific potential and well-developed system of professional education;
- variety of forms of economic activity, combination of large agricultural holdings and small economic entities in agriculture;
- investment reliability.

The weaknesses of the agricultural sector are as follows:

- dependence of agricultural production results on external, adverse natural and climatic conditions, seasonal nature of production;
- insufficient state support for the industry;
- weak development of social infrastructure; shortage of young highly qualified personnel experienced in modern IT technologies and high-tech equipment, increased trend of youth migration to cities;
- lack of awareness of agribusiness on modern technologies, new achievements of science and technology;
- high credit burden on agricultural producers;
- low degree of processing of agricultural products; use of obsolete equipment and technologies in most agricultural enterprises.

The studies identified the following opportunities for regional agriculture:

- increase of export supplies; increase of self-reliance in the region;
- construction and development of complexes for advanced processing of agricultural raw materials;
- competitiveness enhancement of regional products;
- focused research on the needs of agriculture and agribusiness;
- widespread introduction of biotechnology into agricultural production;

- creation of social and economic conditions to attract young specialists to rural areas, preservation of jobs;
- technical re-equipment of agricultural production;
- improvement of the investment attractiveness of the industry.

The existing threats to the agricultural sector of the republic are as follows:

- natural and man-made factors;
- epidemics of various diseases of plants and animals;
- reduction of state support for agriculture under the terms of Russian membership in the WTO;
- instability of prices for fertilizers, energy carriers, plant and animal protection products, etc., as a result of this, an increase in the cost of products and a decrease in competitiveness;
- reduction of customs duties, as a result – aggravation of competition of domestic with foreign producers, influx of cheap, low-quality imported goods, crowding out of domestic producers from the agricultural market.

7. Conclusion

The Republic of Tatarstan is one of the main agrarian regions. The most important task of the government of the republic in the field of agri-food policy is to create conditions for the high-tech, competitive agricultural sector capable of ensuring the food security of the region and the country, comfortable working and living conditions of rural residents, and increase the export of national agricultural products (Klychova et al., 2021). The government of the republic made a lot of efforts to do so, and these efforts are justified. Under the current circumstances it is important not only to preserve, but also to strengthen the position of the republic on the national and world markets.

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