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ENSURING FOOD SECURITY THROUGH TRADE AND ECONOMIC COOPERATION BETWEEN SIBERIA AND THE EURASIAN ECONOMIC UNION

A.A. Bykov, D.V. Borisov, S.V. Ryumkin

The paper focuses on a critical issue of ensuring food security for countries that are members of the Eurasian Economic Union (EAEU), which is especially important given the transformation of the global food market in the context of the COVID-19 pandemic. The research aims (1) to assess the possibility of creating a single food market of the EAEU and (2) to identify the difficulties faced by the Siberian agricultural sector in addressing food security issues and export development. The paper presents the results of the study concerning the development of trade and economic cooperation between the Siberian Federal District (SFD) of the Russian Federation and the EAEU countries with regard to the agricultural market. Based on the statistical analysis of national data, we examined the particular aspects of Siberian agricultural export development. We were able to identify the largest trading partners among the EAEU member states and study the particular aspects of their food imports based on the Russian database indicators. According to the analysis results, we concluded that exports are dominated by food products, namely intermediate and final products, which correspond to the objectives of the Russian Federation National Project International Cooperation and Exports. Market research on the breakdown of imports to the EAEU showed that it imported dairy products, fruits, vegetables, and processed foods. We identified the most promising areas of export development for the SFD based on a review of the scientific studies on economic integration and food security issues. The scientific novelty of this research lies in proving the need to develop exports of finished food products with a high level of processing, which requires the integrated development of the food processing industry in the SFD by means of regional strategic programs for introducing innovative biotechnologies in deep processing of agricultural raw materials. The research findings might be of great interest to members of the academic community and undergraduate and graduate students pursuing similar research agendas.

Keywords: Eurasian economic union; international economic integration; food security; agricultural sector; food market; grain; export; import

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Научная статья | Торгово-экономическое сотрудничество

РАЗВИТИЕ ТОРГОВО-ЭКОНОМИЧЕСКОГО СОТРУДНИЧЕСТВА РЕГИОНОВ СИБИРИ И СТРАН ЕАЭС НА ПРОДОВОЛЬСТВЕННОМ РЫНКЕ

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Статья посвящена проблеме, актуальной для стран, входящих в Евразийский экономический союз (ЕАЭС) – обеспечению продовольственной безопасности, особенно важной в условиях трансформации мирового продовольственного рынка в условиях пандемии. Целью авторского исследования стала оценка возможностей по формированию единого продовольственного рынка ЕАЭС и выявление проблем участия агропромышленного комплекса Сибири в решении задач обеспечения продовольственной безопасности и развития экспорта. В статье отражены результаты исследования развития торгово-экономического сотрудничества регионов Сибирского федерального округа (СФО) и стран ЕАЭС на рынке сельскохозяйственной продукции и продовольствия. Используя методы статистического анализа на основе показателей отечественных данных, авторы исследовали особенности развития экспорта сибирской агропромышленной продукции. Выявлены наиболее активные партнёры среди стран-членов ЕАЭС, изучены особенности импорта продовольственной продукции из этих стран на основе показателей российской базы данных. На основе результатов анализа сделан вывод о том, что в экспорте преобладают пищевые продукты, то есть продукция верхнего и среднего передела, что соответствует задачам национального проекта Российской Федерации по развитию экспорта. Анализ структуры импорта из стран ЕАЭС показал, что ввозится молочная продукция, а также фрукты, овощи и продукты их переработки. Опираясь на материалы анализа и обзор научной дискуссии по проблемам экономической интеграции и обеспечения продовольственной безопасности, авторы выделяют наиболее перспектив-

ные направления развития экспорта из СФО. Научная новизна заключается в обосновании необходимости развития экспорта готовой пищевой продукции с высоким уровнем переработки, что требует комплексного развития пищевой и перерабатывающей промышленности в СФО на основе региональных стратегических программ по внедрению инновационных биотехнологий по глубокой переработке сельскохозяйственного сырья. Результаты исследования, отраженные в статье, могут быть интересны представителям научного сообщества, студентам и аспирантам, занимающимся аналогичной проблематикой.

Ключевые слова: Евразийский экономический союз; международная экономическая интеграция; продовольственная безопасность; агропромышленный комплекс; продовольственный рынок; зерно; экспорт; импорт

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Introduction

This study presents an urgent need to ensure food security in the Eurasian Economic Union (EAEU) based on creating a Common Economic Space, developing and implementing a single economic policy, including the agricultural sector. A significant role in overcoming these challenges is played by the Russian Federation National Project *International Cooperation and Export*, namely, the Project *Export of Agricultural Products* (International Cooperation and Export, 2018). In order to overcome the challenges of developing mutually beneficial trade and economic relations in the agricultural market between the Siberian Federal District (SFD) and the EAEU, it is necessary to scientifically substantiate the export profile of competitive products and identify problems that hinder the export of intermediate and final products.

Many Russian researchers pay considerable attention to how to achieve the level of food production and consumption in accordance with the new Food Security Doctrine [4; 20]. At the same time, others emphasize (1) the importance of food security for the national population policy [15], (2) the possibility of developing a market of environmentally friendly products [6], and (3) the importance of creating a national export potential [18; 19]. Moreover, trade and economic cooperation in the EAEU food market given the growing international division of labor due to the specifics of agriculture requires the study of theoretical and practical issues relating to the creation of a common food market

in the EAEU, product export development, and the introduction of a common food processing policy.

Materials and methods

When carrying this research, we attempted (1) to assess how the SFD is involved in the process of creating a common food market in the EAEU, (2) to identify what problems the Siberian agricultural sector faces in export development, and (3) to determine the profile of the food imports into the SFD from the EAEU. In this regard, we set the following objectives: (1) to assess the export and import transactions in the food market between the SFD and the EAEU in 2015–2020; (2) to analyze the export profile and its dynamics by commodity groups in accordance with the commodity nomenclature of foreign economic activity (CNFEA); (3) and to assess the specifics of the SFD food import in accordance with CNFEA, which allowed us to identify the most demanded commodity groups of imported food products. In order to facilitate this research, we reviewed a number of Russian and foreign studies on food security issues and agriculture integration processes in the EAEU. We also employed the methods of economic and statistical analysis as the primary research methodology. As the initial source of information, we used official data from the national statistical offices [2; 9]. The study examined the export profile and its dynamics between 2015 and 2020. We believe that by analyzing the selected characteristics, it is possible to determine the export profile of Siberian competitive products and identify the problems that constrain the export of intermediate and final products.

Results

There have been established long-term economic ties between various regions of Russia, including the Siberian Federal District, and the EAEU member states. These ties are intended to create a common food market and ensure mutual food security. The study examined the mutual supply of all agricultural products and foods over the period from 2015 to June 2020 (Fig. 1) [2]. We were able to conduct this study in accordance with the commodity nomenclature of foreign economic activity. We also examined several types of goods: CNFEA 01 – animal products; CNFEA 02 – crop products; CNFEA 03 – fats and oils; and CNFEA 04 – food products, beverages, and tobacco. The estimates showed that the share of food and agricultural products in total exports was 15.3% of all types of goods.

During the given period, animal products imports to Siberia exceeded their exports by 95.7 million dollars. Kazakhstan imported poultry meat, frozen

cattle meat, and pork. All EAEU member states imported condensed milk, cream, and cheese, whereas a special emphasis was given to national varieties of cheese.

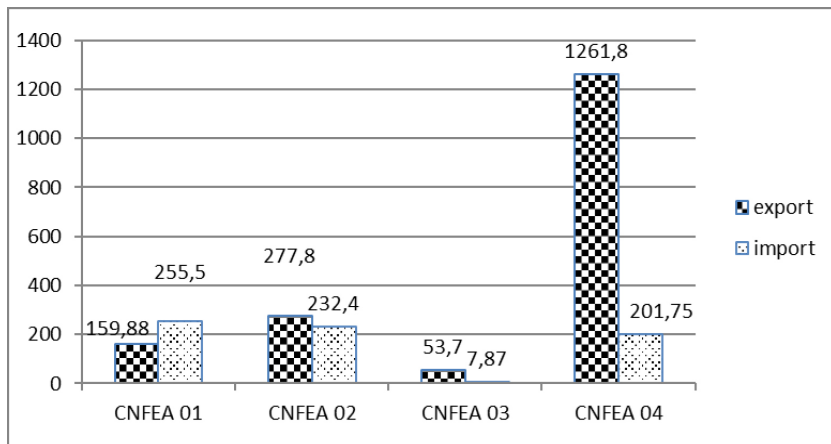


Fig. 1. Export and import development in the food market between the Siberian Federal District and the EAEU between 2015 and 2020, million dollars

Crop products exports exceeded imports by 45.4 million dollars. Grain exports continued to grow steadily, accounting for 40% to 55% of crop exports in various EAEU countries. Cereal products exports also increased, with the share in this product group ranging from 14% to 50%.

Wheat held the largest share in grain exports from Siberia. Wheat exports in 2020 amounted to 815.58 thousand tons worth 178.4 million dollars: 257.0 thousand tons were exported to Kazakhstan (49.1 million dollars), 78.8 thousand tons – to Kyrgyzstan (17.4 million dollars), 0.12 thousand tons – to Armenia (0.22 million dollars), and 0.02 thousand tons – to Belarus (SD 0.01 million dollars).

The development of the Siberian crop exports was facilitated by the grain processing industry, which comprises a powerful industrial sector with a processing volume of 8.4 million tons of grain. However, the capacity utilization rate varied from 53.5% (flour) to 57.8% (animal feed). The share of deep-processed grain products (starch, glucose, glucose-fructose syrups, bioproducts, including vitamins) in the SFD exports was insignificant. The SFD exports were dominated by the following categories of products: (1) seeds, grains, and medicinal plants (33.4%); (2) grain varieties (30.5%); and (3) flour and cereal products (19.6%).

Siberian regions imported vegetables (one-third of all crop imports), fruits, nuts, cereals, and grains.

There were almost no imports in the export category of fats and oils, whereas vegetable oils were exported from Siberia in a wide range: sunflower oil was the main export item (over 60% of this export category of goods), followed by soybean oil and rapeseed oil. There was a fairly steady demand for margarine, as well as for linseed oil, corn oil, ginger oil, sesame oil, and castor oil. Unique Siberian oils enjoyed a particular demand, including cedar oil, milk thistle oil, sea buckthorn oil, and pumpkin oil.

According to the research findings, food exports from the SFD to the EAEU were 6.5 times more than food imports to the SFD. Goods with high added value were among the most exported: (1) cereal and flour products; (2) chocolate and other products containing cocoa; (3) pastries, including cakes and cookies; (4) sugar; and (5) pasta. A wide variety of sugar and confectionery products were imported from the EAEU.

The study of trade relations in the agricultural products market showed that exports to the EAEU from the SFD amounted to 1,653.18 million dollars during the given period, where the share of Kazakhstan was 73.37%, Belarus – 13.2%, Kyrgyzstan – 11.03%, and Armenia – 2.4% (Table 1). (Export and import of Russia by goods and countries, 2021).

Table 1.

Food exports from the Siberian Federal District to Central Asian countries between 2015 and 2020 (six years) (million dollars)

Years	Countries				Total for five years
	Kazakhstan	Kyrgyzstan	Belarus	Armenia	
CNFEA 01 (01-05)	139.2	17.3	3.2	0.18	159.88
CNFEA 02 (06-14)	200.3	31.2	40.1	6.2	277.8
CNFEA 03 (1502-1517)	43.3	8.12	1.24	1.04	53.7
CNFEA 04 (16-24)	928	127.9	174.3	31.6	1,261.8
Total	1,210.8	184.52	218.84	39.02	1,653.18
Share of the country in exports over five years, %	73.37	11.03	13.2	2.4	

Among the countries where animal products are exported from the SFD, Kazakhstan ranked 1st with its share of 32.5%, Kyrgyzstan – 8th with a share of 4.2%, and Belarus – 17th with a share of 0.8%.

China remained the undisputed leader in exports of crop products, accounting for one-third of these exports. Kazakhstan ranked 3rd with a share of 12.1%, followed by Belarus in 8th place with a share of 2.9%, and Kyrgyzstan in 14th place with a share of 1.1%.

Vegetable oil exports have been actively developing by the efforts of Siberian agricultural enterprises for the last five years. China was the largest trading partner in this market with a share of 39.6%, followed by Kazakhstan with 10.3% and Kyrgyzstan in 9th place with a share of 2%, while Belarus ranked 14th with 0.3% and Armenia ranked 19th with 0.2%.

The SFD exports of food products amounted to 1,261.8 million dollars during the given period. Kazakhstan made up 43.1%, indicating that it was the unquestionable leader in this market segment. Belarus ranked 3rd with the export share of 8.1%, Kyrgyzstan – 5th place with a share of 6%, Armenia – 11th place with a share of 1.4%.

Therefore, Kazakhstan was a leading trading partner of Siberian agricultural producers engaged in export activities.

We studied how the EAEU affected the food and agricultural products market in the SFD (Table 2) [9].

Table 2.

**Food imports to the Siberian Federal District from the EAEU countries
between 2015 and 2020 (six years) (million dollars)**

Years	Countries				Total for five years
	Kazakhstan	Kyrgyzstan	Belarus	Armenia	
CNFEA 01 (01-05)	106.2	26.4	120.6	2.3	255.5
CNFEA 02 (06-14)	200.3	15.3	13.4	3.4	232.4
CNFEA 03 (1502-1517)	7.8	-	0.07	-	7.87
CNFEA 04 (16–24)	183.0	4.1	13.2	1.45	201.75
Total	497.3	45.8	157.27	7.15	707.52
Share of the country in imports over five years, %	69.4	6.5	22.2	1.0	100%

Kazakhstan was the leading trading partner by import volume with 69.4% of the total imports from the EAEU during the given period, Belarus ranked 2nd, Kyrgyzstan ranked 3rd, and Armenia ranked 4th.

Crop products were imported the most, with Kazakhstan ranking 1st in terms of imports among the EAEU countries, followed by Kyrgyzstan in 2nd place, Belarus in 3rd place, and Armenia in 4th place.

Discussion

Some researchers focus on the development strategies of the EAEU [7; 10]. A number of studies indicate that, given the increasing competition in the global food market, special importance has been acquired by regional trade and economic integration [11; 12]. When discussing opportunities for export development of the SFD agricultural sector, some studies emphasize the prospects of establishing long-term economic ties with Asian countries [17; 19], including countries that seek to join the EAEU [1; 5]. Several researchers pay attention to the competitiveness of the EAEU food products in the global food market [3; 16] while emphasizing the importance of government support for the development of agricultural exports [8; 14]. However, there has been insufficient research into the issue of how to establish joint industrial and business activities of agricultural enterprises in the EAEU.

Insights into the theoretical discussion on the development of the EAEU and the creation of mutual food security strategy allowed us to reach a consensus on the issues of export and import transactions concerning the Siberian agricultural sector.

The SFD faces a major challenge related to the export development of agricultural products because of large exports of unprocessed grains and seeds from oil-bearing crops, resulting in commodity exports. Almost all Siberian regions are primarily exporting to China, the leading trading partner, and only then do they export products to the EAEU countries. There are practically no grain exports of deep-processed products as such processing facilities are still under construction in the SFD. This leads to a decrease in the efficiency of grain production and the reduction of budgets at all levels in the SFD regions.

There are no organic exports because agricultural enterprises in Siberia are only beginning to engage in eco-certification of farmland and agricultural products.

Conclusion. We have undertaken a review of the main development areas of trade and economic cooperation between Siberia and the EAEU in the market of agricultural products, as well as the possibility of its strategic development to ensure food security in the EAEU. Agricultural sector exporters in the SFD should strive to export finished products since this is the most promising area for implementing the concept of national agricultural exports development.

The development of the food and processing industry can become a driver of sustainable economic development of rural communities through the industrial development and creation of new technology-driven enterprises that put into practice scientific innovations of Siberian scientists and engineers related to zero-waste biotechnology of agricultural raw materials processing.

We should mention the deep processing of grain crops supported by Russian technologies as one of the most important sectors of the food processing industry in the SFD. Grain crops are critical in ensuring food security and livestock industry development, but they are also important for the chemical industry, pharmaceutical industry, and other economic sectors. In this regard, grain largely determines the cross-sectoral proportions of the local economy.

It would be reasonable to create an analytical center specialized in biotechnologies developed by Siberian scientists in order to increase the competitiveness of the Siberian food market. This center will (1) focus on promoting research and innovation in biotechnology, (2) establish cooperation between entrepreneurs, the academic community, and the local authorities, (3) create an infrastructure to support innovative biotechnology projects, and (4) implement innovative pilot projects. For example, it would be sensible (1) to create functional food products in the dairy industry, including therapeutic products, preventive products, and children's products, (2) to create food ingredients, including vitamins and organic mixtures, and (3) to perform deep processing of food raw materials. Such enterprises will make it possible to fully meet the consumer demand in the food market in all EAEU member states.

Belarus is a leader in flax production and processing, and its technology is one of the finest in Europe, which is why it is advisable to expand production of all flax varieties in the South Siberian macro-region to organize its processing by establishing joint ventures of Russia and the Republic of Belarus. One promising area of cooperation lies in establishing joint processing enterprises in Siberia to produce functional and specialized nutritional products using innovative technologies of Siberian and Belarusian scientists, taking into account the steady growth in the demand for these products.

In order to expand the animal products range, it would be reasonable to create joint ventures in the SFD with entrepreneurs from Kazakhstan and Kyrgyzstan, including attracting Islamic private equity funds. This will make it possible to produce quality products that meet export requirements in the Arab states, which are the most promising for the national export policy development.

Subsequently, it might be worth considering developing scientific and technological cooperation among the EAEU member states to produce goods according to people's changing needs and jointly develop exports to other countries.

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