Assessment of the place and role of agro-industrial complex
exports in the region’s economy

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Abstract. The development of the export potential and the formation of the export policy of the region are an important process, including domestic and foreign policy components. Improving the export activity of the subject is complicated by the presence of crisis phenomena, both in the economy and in the social sphere, similar processes are observed in the agricultural sector at the present stage. In this study, the authors paid considerable attention to the theoretical component of the topic, namely, they justified the importance of export operations as a strategic resource for the development of the territory, characterized the totality of factors determining the export potential of the territory, and updated the need for an analytical study of the composition, structure and dynamics of exports in modern conditions. The basis of the analytical study was the volume of agricultural exports of Novgorod region and its changes under the influence of the existing regional policy. Particular attention was paid to determining the place of the agricultural export policy at the federal and regional levels, its goals, objectives, activities and emerging risks in the implementation process, through analysis of the national project “International Cooperation and Export”, as well as federal and regional projects developed as part of national project. The study of the stated problems was also focused on the aspect related to assessing the degree of influence of export activity in the regional agro-industrial complex (AIC) on the economic and social indicators of the development of the territory, the proof of which was the confirmation of the relationship with the use of parametric methods.

1. Introduction
At the present stage, the economic development of a territory - a country, a region largely depends on such a direction of activity as export of products, goods and services. For Russian reality, export has always been and remains one of the key issues to ensure the target value of the SNA macroeconomic indicator – “net export”. It should be noted that the task of strengthening the position of domestic exporters is especially relevant against the background of political instability, increased competition in foreign markets, the emergence of new trends in the foreign economic sphere. All these problems are projected onto the regions of the Russian Federation, including Novgorod region. Novgorod exports are gradually acquiring new content.

To date, orientation to foreign markets, to international trade is one of the most promising alternatives for the development of any territory, including the region, it is a component of a regional economic strategy. International trade of a territorial subject is characterized by two indicators. First, the value of trade, that is, the sum of exports and imports. Second, the foreign trade balance is the difference or ratio
of exports to imports. It is traditionally believed that if exports are larger than imports, the country has a positive foreign trade balance, otherwise it is negative. Foreign trade operations are of great importance for the economy of the country as a whole. By delivering goods and services to foreign markets, the state demonstrates its potential capabilities and, as a result, its competitive advantages.

The foreign economic activity of most states, including Russia, is based on exports. The origins of the study of the place of export in the life of the state were researchers of the era of mercantilism. The formation of their economic views took place during the formation of the world market, the development of capitalism, the heyday of colonial empires. Mercantilists were convinced that foreign trade was the main source of wealth for the country. They advocated the need to stimulate local merchants and manufacturers to export, establish high customs duties on imported goods [1, 2].

Foreign economic activity is one of the areas of international business and is carried out at the level of economic entities - export-oriented enterprises. Export for companies is based on the criteria of entrepreneurial activity and closely intersects with production processes. At the same time, the export activities of companies are distinguished by legal and economic authoritarianism, legal independence.

At the same time, a number of economists Kadochnikov S.M. [3], Fedyunina A.A. [3], Novikov Yu.I. [4], Bayetova D.R. [4] believe that a focus on foreign trade could adversely affect domestic production. There is an opinion that it is beneficial for Russia to export only those goods whose prices are much higher than costs. This may be products based on unique scientific developments, which have no analogues in the world. The negative role of export is also noted by the theory of the “resource curse” or the Dutch disease. It is applicable to Russia, since the export policy of our country retains its raw material orientation.

Along with this, mechanisms should be formed to stimulate non-primary non-energy exports, export of finished products with improved properties, technically and technologically sophisticated products, high-tech and intellectual services, primarily engineering, computer, educational, should be supported.

As noted by S. O. Polkovnychenko [5], the development of foreign economic activity of the state is directly affected by the export opportunities of the territory, that is, the conditions, circumstances without which export is not feasible. These include, in particular: the profitability and competitiveness of exported products; state support for exporters; continuous modernization of production; personnel training; marketing; the presence and growth of the number of export-oriented enterprises [6].

A systematic and long-lasting export activity requires the development of an export strategy. This is a kind of action plan that is needed as a separate exporting enterprise, industry sector, region, or country as a whole. An export strategy can be general or highly detailed. The set of tasks, activities and targets for export development is contained in the development programs of the territory, where significant attention is given to project management and the effectiveness of its implementation [7]. But in any case, a systematic approach to the organization of export activity implies well-established and clearly functioning marketing and logistics systems, a system for attracting new customers, algorithms for processing incoming requests, etc. A prerequisite for building an export strategy is determining the role and place of export products in the region’s economy, which actualizes the direction of this study.

2. Objects and methods of research
The object of this study was the volume of AIC products exported by Novgorod region, its composition, structure and dynamics.

In this work, the authors used general scientific approaches - synthesis, analysis, as well as methods of statistical observation, dynamic comparison, structural analysis, correlation and regression analysis, methods of graphic and tabular reflection of empirical information.

3. Results and discussion
Analysis of the importance of agricultural exports in the economy of the territory is determined by the presence of the national project “International Cooperation and Export” and the federal project “Export of AIC Products” that is part of it. The listed projects contain a number of target characteristics for the development of the analyzed direction – table 1.
Table 1. Targets of federal projects within the national project “International Cooperation and Export”.

| Name of the federal project | Base value | Goal of the federal project                                                                 | Budget of the federal project (bil. Rub.) |
|-----------------------------|------------|---------------------------------------------------------------------------------------------|------------------------------------------|
| “Industrial Export”         | $ 114 billion | Achievement of the export indicator of competitive industrial products in the amount of: 2019 - $136 billion; 2021 - $ 205 billion; 2024 - $ 205.5 billion | 423.8                                   |
| “Export of AIC Products”    | $ 21.6 billion | The volume of agricultural products export: 2019 - $ 24 billion; 2021 - $ 28 billion; 2024 - $ 45 billion | 406.8                                   |
| “Systemic measures for the development of international cooperation and exports” | Not stated in the project | The growth in the number of domestic exporters by 2024 to 12 thousand units. The volume of exports of non-primary non-energy goods: 2019 - $ 160 billion; 2021 - $ 181 billion; 2024 - $ 250 billion | 98.8                                    |
| “Export of Services”        | $ 57.8 billion | Volume of export of services: 2019 - $ 70 billion; 2021 - $ 82 billion; 2024 - $ 100 billion Improving the conditions for sending goods to a foreign consumer | 5.8                                     |
| “International Trade Logistics” |                     |                                                                                             | 21.6                                     |

The implementation of the above federal projects has become a priority for the regions. Pursuant to paragraph 4 of the order of the Chairman of the Government of the Russian Federation D.A. Medvedev from November 10, 2018 No. DM-P6-7776 to December 14, 2018, entities developed regional passports of federal projects, which should ensure the achievement of the goals and indicators of federal projects. Thus, the regional project “Export of AIC products” of Novgorod region was developed as part of a federal project and was signed by the Governor of Novgorod Region Andrei Nikitin on February 28, 2020.

The assessment of the place of export of AIC products in the economy of the region was carried out on the basis of the analysis of the above regional project, the purpose of which is to achieve the export of AIC products in the amount of $ 66 million by the end of 2024 by creating a new commodity stock, as well as export-oriented productive infrastructure, removing trade barriers to ensure access to AIC products to target markets and creating a system for promoting and positioning AIC products.

Table 2. Regional project targets “Export of agricultural products”, $ mln.

| Name of indicator                           | Base value | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Growth rate, % |
|---------------------------------------------|------------|------|------|------|------|------|------|------|----------------|
| AIC products export volume                  | 23.1       | 28.3 | 30.1 | 32.5 | 36.2 | 40.2 | 51.7 | 66.0 | 2.86           |
| Export volume of fish and seafood           | 12.8       | 15.0 | 16.5 | 16.9 | 17.0 | 18.0 | 19.0 | 21.5 | 1.68           |
| Export volume of meat and dairy products    | 0.5        | 0.4  | 0.4  | 0.6  | 0.7  | 0.8  | 1.1  | 1.3  | 2.60           |
| The volume of exports of food               | 5.4        | 10.1 | 10.2 | 11.3 | 12.6 | 13.0 | 16.5 | 26.8 | 4.96           |
and processing industries
Export volume of other AIC products

|                | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|----------------|------|------|------|------|------|------|
| 4.4            | 2.8  | 3.0  | 3.7  | 5.9  | 8.4  | 15.1 |
| 16.4           | 16.0 | 3.73 |      |      |      |      |

Table 2 data indicate that a 2.86-fold increase in the export of AIC products by the Ministry of Agriculture of Novgorod Region is planned to be achieved by a 4.96-fold increase in the export of food and processing products and bringing this type of product to one third of the region’s AIC exports (i.e. there is a commodity restructuring of exports of agricultural products). This trend is positive, since Novgorod region does not plan to offer the market a raw material component, but a product created and processed in the region. A number of measures will contribute to achieving positive dynamics in the export characteristics of the agro-industrial complex. The Ministry of Agriculture of the region has developed a set of priority measures aimed at achieving the target indicators of agricultural exports, which include:

- Creation of a support system for farmers and development of rural cooperation;
- Improving the efficiency of agricultural processing and food industry;
- Improving the system of promotion and positioning of agricultural products in the region.

We visualize the growth dynamics of the export volume of AIC products by structural elements - figure 1.

**Figure 1.** Chain indicators of growth (dynamics) in the volume of exports of AIC products in Novgorod region in accordance with the regional project “Export of AIC products”.

The data in Figure 1 confirms the earlier conclusions that the largest increase is in such a structural element as “The volume of exports of food and processing industry products”. This increase is planned to be achieved due to the introduction of domestic technologies in crop production, based on the latest scientific achievements; adoption of measures to improve the efficiency of use of agricultural land; preparation for the implementation of business projects for cultural events; subsidy payments.

An analysis of the distribution of the region’s exports by partner countries showed that the top five countries-partners of the Novgorod region in 2016 included China, the USA, Brazil, Finland and the Republic of Belarus. In 2017, Finland dropped out of this list and gave way to Sweden, while in 2018, similarly Belarus missed Ukraine ahead (table 3).
It is expected that this year the number of Novgorod agricultural exporters will increase. The agricultural production index in 2018 amounted to 102.6%, in 2019 103.4%. Agricultural production growth was recorded in most areas of the region. Thus, in 2020, the Novgorod region plans to increase the export of agricultural products and food products by increasing production volumes, as well as by implementing investment projects in the field of crop production, production and processing of food products.

At present, two investment projects are being implemented in the region aimed at achieving the forecasted indicators of production and export of AIC products. So, LLC “Medovyi Dom” is introducing an automated and robotic production line for deep and shallow honey processing. LLC “TD Grumant” is planning to expand the range of products and begin construction of a blueberry processing workshop. It is expected that this year the number of Novgorod agricultural exporters will increase. LLC “Stashevskoye” (production of gluten-free oatmeal), LLC “Belgrankorm” (poultry, meat processing, dairy farming and plant growing), and LLC “Novgorodskiy Bekon” (farming, plant growing, pig farming, poultry farming, etc.) are planning to go to foreign markets.

Table 4 lists possible risks that may lead to a decrease in domestic production and not allow achieving the target indicators of the regional project “Export of AIC products” in terms of the volume of export of products, as well as measures to minimize them.

Table 3. Export distribution of the Novgorod region by partner countries (thousand USD).

| Major counterparty | 2016 Value | Share in export, % | 2017 Value | Share in export, % | 2018 Value | Share in export, % |
|--------------------|------------|-------------------|------------|-------------------|------------|-------------------|
| **CIS countries**  |            |                   |            |                   |            |                   |
| The Republic of Belarus | 54736.9 | 5.8 | 39194.3 | 3.7 | 44063.0 | 3.3 |
| Kazakhstan         | 30248.9 | 3.2 | 26846.8 | 2.5 | 26755.5 | 2.0 |
| Ukraine            | 21314.0 | 2.0 | 53814.7 | 4.0 |
| Other              | 29920.2 | 3.2 | 5816.7 | 0.6 | 9839.9 | 0.7 |
| **Foreign countries** | 822901.7 | 87.7 | 961696.3 | 91.2 | 1207547.8 | 90.0 |
| China              | 235694.1 | 25.1 | 260760.1 | 24.7 | 301734.8 | 22.5 |
| Brazil             | 104496.7 | 11.1 | 178096.5 | 16.9 | 159675.7 | 11.9 |
| USA                | 136447.7 | 14.5 | 122409.5 | 11.6 | 227908.4 | 17.0 |
| Sweden             | 42422.7 | 4.5 | 92693.9 | 8.8 | 113044.4 | 8.4 |
| Finland            | 64516.0 | 6.9 | 83603.3 | 7.9 | 91535.8 | 6.8 |
| Thailand           | 38665.6 | 4.1 | 25895.8 | 2.5 | 40814.2 | 3.0 |
| Poland             | 17953.7 | 1.9 | 21182.3 | 2.0 | 23510.8 | 1.8 |
| Peru               | 31202.2 | 3.3 |
| Estonia            | 20341.0 | 2.2 | 18083.5 | 1.7 | 22211.8 | 1.7 |
| Lithuania          | 8073.0 | 0.9 | 16325.9 | 1.5 | 22981.7 | 1.7 |
| Israel             | 13369.3 | 1.3 | 19463.1 | 1.5 |
| Other              | 123089.0 | 13.1 | 129276.3 | 12.3 | 184669.0 | 13.8 |

Against the background of growing exports of Novgorod region, the share of non-primary non-energy exports is increasing, so according to the results of 2018, it reached $ 1.296 million, which is 96% of the region’s exports, in which the export of AIC products plays a significant role. The main directions of export sales of AIC products from enterprises of the Novgorod region are Kazakhstan, Uzbekistan, Belarus, Azerbaijan, Armenia, China and the EU countries.

The agricultural production index in 2018 amounted to 102.6%, in 2019 103.4%. Agricultural production growth was recorded in most areas of the region. Thus, in 2020, the Novgorod region plans to increase the export of agricultural products and food products by increasing production volumes, as well as by implementing investment projects in the field of crop production, production and processing of food products.

Table 4. Regional project “Export of AIC products”: risks and measures to minimize them.

| Risks                                                      | Risk Mitigation Activities                                                      |
|------------------------------------------------------------|---------------------------------------------------------------------------------|
| Reduced crop yields under the influence of adverse natural factors. | Carrying out activities aimed at increasing the yield of agricultural crops, including improving the quality of... |
agricultural technology, intensification of agriculture, the use of plant protection products.

Conducting systematic work to maintain a favorable epizootic and phytosanitary situation in the Novgorod region

Conducting timely monitoring of requirements for domestic agricultural products from foreign importing countries, adjusting possible export volumes for these countries, taking into account changes when choosing priority areas.

It should be noted that in the first half of the year there is a risk of a decline in exports of agricultural products in the Novgorod region due to the spread of coronavirus infection (COVID19) of about 90% probability. The proposed solution to minimize the risk situation arises is to increase the volume of export of AIC products while improving the sanitary-epidemiological situation in the world.

Evaluation of the role of AIC exports in the economy of the region and the degree of influence on indicators of socio-economic development was carried out using statistical analysis methods.

According to a number of authors – J P Pradhan [8], M Zohair [8], D Fu [9], Y Wu [9], D Powell [10] when studying the problems of using the export-import potential of the region, as well as the degree of its influence on the socio-economic characteristics of the region’s economy, it is possible to apply the approaches of correlation and regression analysis. When constructing a regression model, the factor considered is export of AIC products, the productive (economic) volume of gross AIC production or regional gross product, and the number of people employed in the AIC sector as a productive (social) indicator.

Systematization of empirical information on export characteristics, production volumes and the number of people employed in the agro-industrial complex of Novgorod region over the past ten years, as well as information processing using the approaches of correlation and regression analysis (SPP “Statistica 5.0”) allowed us to construct a number of mathematical models of the dependence of effective socio-economic signs from the factor - export of AIC products and describe the degree of tightness of communication using the coefficient approach – table 5.

Table 5. Results of correlation and regression analysis.

| Name of indicator | Analysis of the dependence of GRP on the export volume of AIC products | Analysis of the dependence of the number of employees in AIC sector on the volume of AIC exports |
|-------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Regression model  | $Y=122864.1+5075.2x$                                                   | $Y=39.16+0.82x$                                                                                  |
| Correlation coefficient | 0.75                                                                   | 0.77                                                                                          |
| Coefficient of determination | 0.564                                                                 | 0.591                                                                                       |
| Fisher criterion  | 3.89                                                                   | 4.376                                                                                       |

The calculation results demonstrate the fact that with an increase in exports of AIC products by 1 mln USD, the gross regional product of the Novgorod region is increasing by 5075.2 mln rubles, and the number of employed people in the agro-industrial complex by 82 people. Thus, there is a direct relationship between the analyzed features in both cases (models), a comparison of the empirical value of the Fisher criterion with the calculated value allows us to conclude that the constructed models reflect the relationships that have developed in the realities.

Evaluation of the tightness of the relationship by means of the correlation coefficient indicates its presence, so the values of 0.75 and 0.77 allow us to state that the relationship between the studied characters is above average. The value of the determination coefficient in the first case explains that the variation in gross regional product by 56.4% can be explained by the variation in the export of agricultural products, and in the second case, the variation in the number of people employed in the AIC
sector by 59.1% is determined by the change in the factor attribute - the volume of AIC exports in Novgorod region.

Thus, the presence of a relationship between the studied characteristics of the socio-economic situation of Novgorod region and the size of exports of agricultural products can be considered proven, and the volume of exports has a significant impact on their values 3.

4. Conclusion

As a result of the study, it was found that Novgorod region began to implement the national project “International Cooperation and Export”, possessing a fairly high export potential. The region has a favorable geographical position, it has a high value of resource potential. Growth in industry is mainly driven by exporting enterprises. The increase in agricultural production allows us to consider the AIC sector as one of the significant for the development of exports. The flexibility of the investment legislation of the region makes it possible to implement large investment projects in the region, which in the future will increase the export of AIC products in the region. Novgorod region is increasing export volumes, the number of exporters is growing.

When determining the place of export of AIC products in the region’s economy, it was found that serious emphasis is placed on the production of export products of food and processing industries, the regional project “Export of AIC products” includes an increase of almost 5 times. The main partners in the sale of AIC products for export to enterprises of Novgorod region are Kazakhstan, Uzbekistan, Belarus, Azerbaijan, Armenia.

As a result of the assessment of the role of AIC exports in the economy of Novgorod region and the degree of influence on indicators of socio-economic development, it was found that AIC exports almost 50% determine the variation in gross regional product and employment in the agricultural sector. This fact confirms the importance of the work of the Ministry of Agriculture of Novgorod Region in the direction of export development. At the same time, there are a number of problems caused by the risk of non-fulfillment of the measures planned by the regional project. The main ones: low export diversification; most exporters sell small volumes of products.

In order for export to become a habitual thing for a significant number of entrepreneurs, rather than a one-time action and accompanied by tangible revenue, it is necessary to regularly remind existing and potential exporters of existing support measures (non-financial and financial), train in export operations, and bring agricultural producers to international online sites. Export development is a rather complicated process and depends on a number of factors. It requires appropriate regulatory, legal, organizational support, support of federal and regional authorities.

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