

Implementation of Russian Transport and Logistics Potential in the Export of Grain Products

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Abstract

The article reflects the current state of logistics transport capabilities aimed at expanding the trade potential of the Russian agro-industrial complex on the example of the grain industry. The authors note that one of the components of successful foreign economic relations is the degree of development of distribution processes both within a single state and in the global economy. The transport capabilities of an individual state affect the intensity of trade relations no less than resource and production ones. The conducted study of the state of transport capabilities has revealed the lack of development of the latter, especially railway transport and grain transshipment capabilities in seaports, which prevents an increase in the volume of grain exports to strategic foreign partners. This, in turn, has determined the importance of the topic and required an analysis of the state's activities to reform the logistics capabilities of the transport infrastructure. Contradictions between the state policy in the field of transport infrastructure development and its real results have been revealed. Using the example of sea transportation, the authors have analyzed the capacity of key ports that transship grain for export.

Key-words: Agro-Industrial Complex, Grain, Seaport, Export, Transportation, Logistics, Port Capacity, Grain Terminal.

1. Introduction

The hypothesis of the study: Russia's foreign economic relations are determined not only by the resource potential and advanced technologies but also by the efficiency of the functioning of distribution channels. Russia's policy in the field of agriculture is aimed at expanding the zone of influence in Asia and Africa, which in turn implies not only increasing export potential but also expanding and modernizing sales channels, including the attraction of foreign investment. Since grain for Russia is not only an object of international trade but also a strategic element of food security, there is a threat of losing control over internal and external grain supplies with the active use of the forces and resources of large logistics corporations.

The purpose of the study is determined by a scientific hypothesis and is to study the state of the country's logistics capabilities to expand exports in the grain market.

The Russian policy in the field of economic liberalization requires further comprehension in the presence of existing obstacles. A modern mechanism for regulating international trade should take into account not only the system of costs and the resulting effects but also the technical conditions of commodity movement. The role of state regulation of logistics flows in key sectors of the national economy is increasing.

The successful implementation of this role is facilitated by the state regulation of foreign trade processes, to create a legislative and regulatory framework; increase the effectiveness of methods of state regulation of export-import operations [1]. These issues should be implemented in key sectors of the national economy, including grain exports. Russia has become a traditional participant in the world market of grain products. Stable yields and high-quality characteristics of Russian wheat contributed to the country's positioning as one of the world's leading grain exporters. The forecast dynamics of the grain market balance indicators indicate the possibility of increasing the volume of grain production and export and entering new markets. In this case, the transshipment and terminal storage capabilities must correspond to the needs of the world market, i.e. intensity and breadth of grain cargo flow. Scholars study various aspects of the implementation of the country's potential in the world market of food products. Special attention is paid to the trade in wheat, corn, and soy.

The article by K. P. Anoop, Vinay V. Panicker defines the grain supply chain: from the farmer to the final consumer, and notes its complexity and versatility [2]. T. Heaps, J.M. Munro develop this idea, considering the entire route of the grain product from the farmer to the elevator and then to transport for shipment abroad. The policy of the main exporters is determined by the cost of grain

production, the cost of transporting grain from farms to storage facilities, and the price received for grain at the elevator. The cost of grain processing at grain elevators, the cost of transporting grain from grain elevators to seaports via railway lines and highways, as well as the world export price of grain determine the price that grain elevators are willing to pay for grain [3].

Despite the transparency of the trade route, the grain supply chain still faces many challenges, despite the importance of this resource in providing supplies for animals and people around the world. These are issues related to agricultural resources, production, logistics, the environment, and player-to-player relationships. Cavalette and Ortega, for example, argue that large amounts of resources are used in soybean production, and for this reason, managers shall implement sustainable production to ensure the long-term environmental sustainability of this chain [4]. Denicoff et al. noted that transportation is an important part of the supply chain, and producers depend on an efficient transport system to move their crops and deliver materials such as fertilizers and seeds [5].

Several studies have identified the complexity of supply chains to point out ways to improve seed performance, production and marketing, and logistics costs. However, these studies do not allow understanding the complexity of relationships in this network and its impact on decision-making [6].

The competitive advantages of Russian grain producers are limited by the need to modernize the existing technical capabilities for transportation, storage, transshipment, and expansion of the capacity of the transport and logistics system (TLS). For this, the state does not have enough to stimulate exporters, but also to support projects for the construction of new and reconstruction of existing transport routes, transshipment points, and elevators to meet their requests from FEA participants.

The following are among the problems that cannot be solved without the intervention of the state: physical and moral wear and tear of equipment in transshipment points affecting their low intensity; insufficient capacity of terminals, their shortage increases the time expenditure and money; the lack of special wagons for transporting grain during the high season, with increased demand for railway transport services and the inexpediency of using trucks on routes over 500 km limits the possibilities of exporters, as a result of which the uneven operation of transport and transshipment points generates possible speculation, ultimately leading to an increase in transportation and transshipment tariffs [7].

All this confirms the importance of coordinating the actions of the state in organizing and providing technical logistics for the export of grain crops to meet the needs of the country itself in grain, as well as the growth of Russia's share in international trade in this product.

The scientific novelty of the study is to determine the scale and capacity of grain transshipment in major seaports of Russia, the factors that hinder the timely implementation of the plan for the reconstruction and modernization of transport infrastructure are identified.

2. Methods

Method or methodology of the work: the article used the analysis of scientific literature, regulatory legal acts, and periodical sources of information. The data of periodicals, as well as official Internet resources containing information on the location, possibilities of transshipment of grain by large ports of Russia, were of particular interest for research. The novelty of the Russian grain strategy predetermined the time interval of publications for analysis – 2018 and the first half of 2021.

The information base of the study was data on the technical characteristics of existing grain transshipment points on the Black Sea coast, as well as on the state of railway transport as the cheapest way to transport grain. The work also used regulations on the modernization of transport and logistics infrastructure.

The structure of the study included several successive stages:

1. determining the importance of the transport sector in the export of grain,
2. analyzing the technical capabilities for grain transportation by sea and rail,
3. determining the dynamics of transportation of grain crops from Russia over the past 3 years,
4. identifying the main problems in the state of transport infrastructure in the export of grain.

3. Results

The grain market can be viewed from several perspectives. Firstly, in terms of natural resource potential. There is not a single country that could completely abandon the import of grain, focusing only on its production. Due to the high dependence of the technology on weather conditions, the situation may lead to an oversupply of one type of grain (for example, wheat), but a small volume of another one (for example, barley). Also, within the framework of the international division of

labor, a country usually produces those products that allow getting the maximum economic effect not so much within the country as on the world market (the theory of absolute and relative advantages).

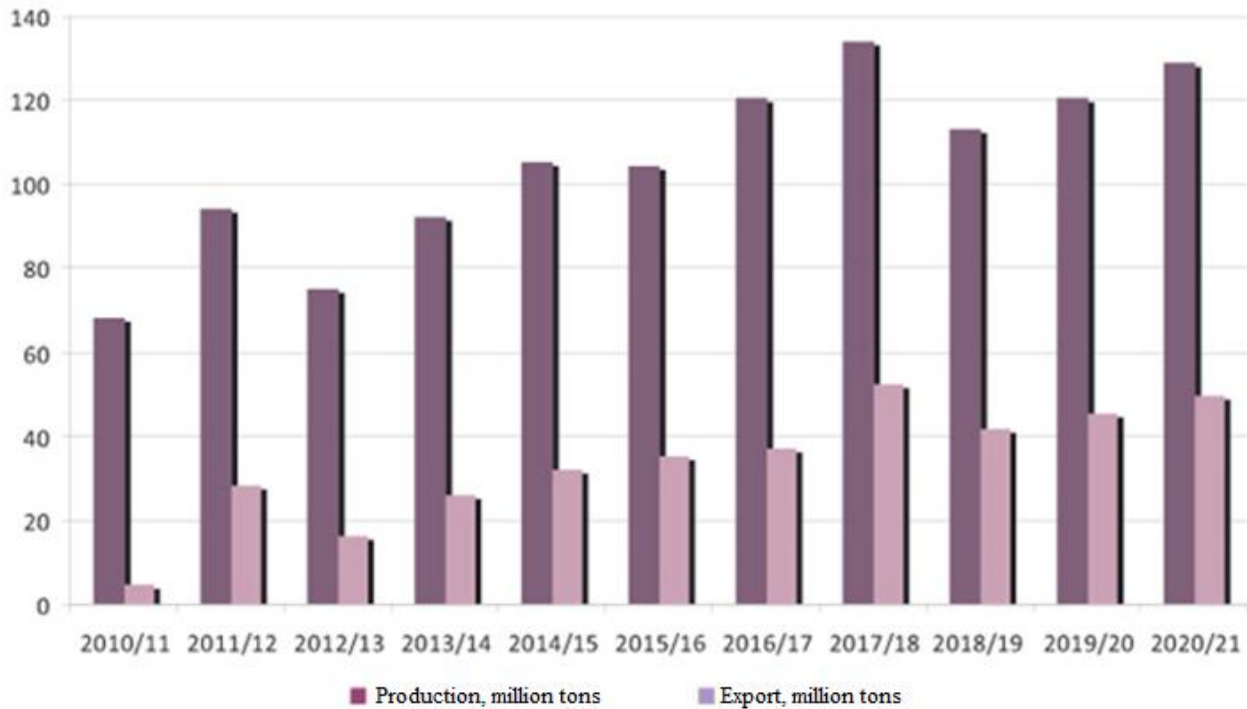
Secondly, from the point of view of consumption. Countries may have traditional products that are in high demand, as well as the understanding of the state: what, in what quantity and what quality of agricultural products are required for consumption within the country, or the technologies used in industrial production require the purchase of a specific type of grain crop.

Thirdly, from the point of view of the interest of business and the state in the development of crop production, since state support for this area is determined by the number of budget revenues to be distributed by industry.

Fourthly, what is equally important for our research is the availability and technical capabilities of product distribution channels. It is not enough just to grow grain, but you still need to collect, process, create specific storage conditions to create reserves, the development, and sufficiency of transport routes, and reasonable logistics ways for the movement of grain from producer to consumer. The latter is of high importance for Russia, with its large territories and different climatic conditions.

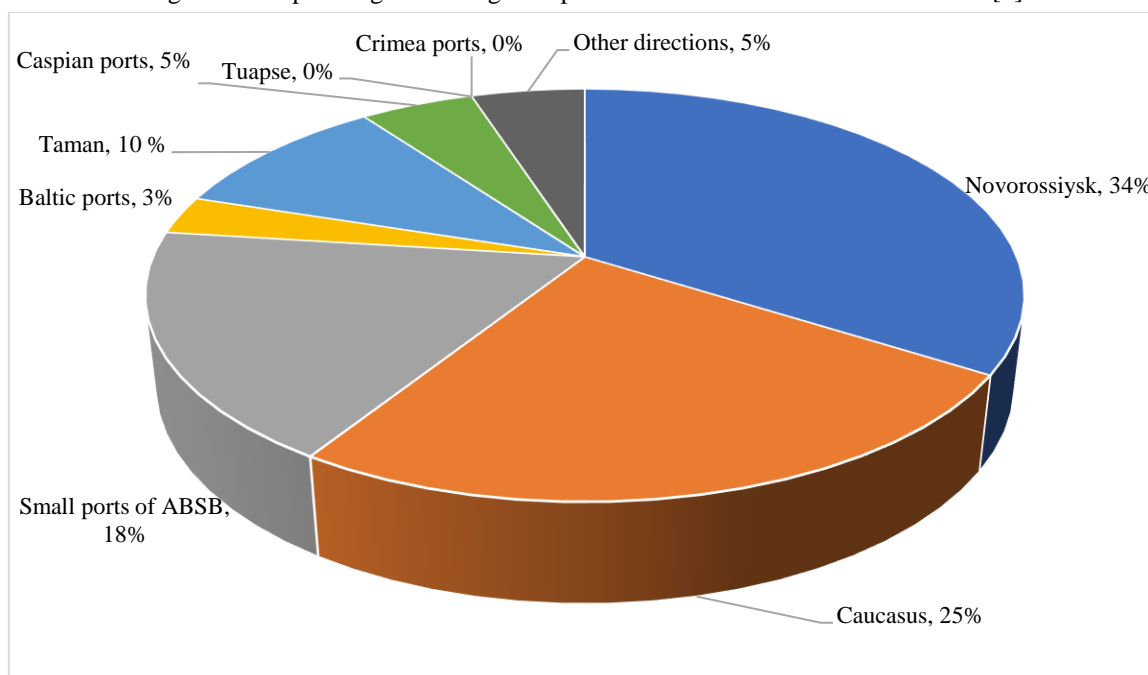
Since the main method of exporting grain abroad is sea transportation, special attention should be paid to the capacity and patency of Russian ports. Let us give several values for grain exports to be able to assess the sufficiency of the country's logistics transport capabilities (Fig. 1). The figure shows the growing dynamics of the volume of foreign trade in grain from 2010 to 2016, after which the foreign trade turnover of grain does not show any progress, against the background of the growing gross harvest, this indicates the presence of internal barriers to increasing exports. According to Rosstat, in the last 2019/2020 agricultural year, 133 million tons of grain in net weight were harvested in Russia, including 85.9 million tons of wheat. Data from the Federal Customs Service of the Russian Federation show that grain exports for this period accounted for a third of the harvested (41.7 million tons) and the major part (80%) accounted for wheat – 33.2 million tons [8].

Figure 1 – Volume of grain collection and export in Russia, 2010-2019 [9]



There is a potential for exporting grain outside the country and the need for state support. In addition, the new season already shows record grain exports, exceeding the previous period by 28%. The main transport used for moving grain within the country is a railway, motor transport is for short distances, sea transport – outside the country. According to the results of July 2020, the leaders in the shipment of grain abroad for the season are traditionally the port of Novorossiysk (16 million tons), Port Kavkaz (16 million tons) – export more than half of all grain shipments abroad, the third place belongs to the small ports of Azov-Black Sea Basin (ABSB) (18% or 9 million tons) (Fig. 2) [9].

Figure 2 – Export of grain through the ports of Russia in the season 2019/2020 [9]



A small part of the grain is sent through the ports of the Far East, Crimea, and other destinations. Therewith, the restrictions due to the epidemic, plus the strict policy of the state, led to a negative trend.

The following is worth highlighting among the main problems: the technical backwardness of the transport infrastructure, the high cost of storage, the inconvenience of placing transshipment points –changing the places of grain storage due to the emergence of private farms focused on exports, the reorientation of transport capacities from the railway to motor transport, which makes the route, delivery time and integrity of the product even less predictable. The last year was not the easiest for the global economy, due to the restrictions caused by the pandemic, the volume of shipments in the middle of 2020 in small ports of ABSB decreased by 30% compared to the previous season, and there was a decrease in the port of Kavkaz (-14%). The ports of Novorossiysk and Taman did not change the volume of transshipment. However, the drop in grain yields in Europe increased the demand for strategically important products, including grain, which contributed to the growth of grain exports through the Baltic ports 2.1 times, shipments through Azerbaijan increased 1.4 times.

A small part of the export is also carried out by the ports of the Far East and by land. The main deterrent is the lack of developed terminals with convenient railway interchanges, low grain storage capacity in this region. The solution to the problem is the new construction of terminals in the

ports of the Far East, which will increase the capacity for sending grain for export in the coming years from 0.4 million to 4.7 million tons in the future.

Consider the possibility of exporting grain through the port of Novorossiysk. It is one of the largest ports in Russia with the largest length of the berthing line up to 8.3 km. Novorossiysk seaport is located in the ice-free Tsemes bay, which allows carrying out navigation all year round. The port has 89 berths with a total length of 15,627 meters, with a capacity of 208,793 thousand tons per year, including 37,509 thousand tons of dry cargo and 883 thousand containers with a volume of 20 feet (TEU).

Novorossiysk Grain Terminal (owned by VTB Group), which is the leader in transshipment of grain on the coast (4.85 million tons for the 2019-2020 season) is among the largest terminals in the Kuban.

The second place belongs to the leader of the last season – PJSC "Novorossiysk grain processing plant", which shipped 4.79 million tons during the same period. The third place is traditionally occupied by JSC KSK (Sergey Shishkarev's Delo Group), which managed to increase its volumes to 5 million tons or more during the quarantine period and grain quotas.

Consider the technical characteristics of these organizations (Table 3).

The main technical capacities of the three companies are represented by the capacity of the elevator, the presence of transshipment complexes, the intensity of shipment, as well as the characteristics of the berths.

The largest capacity of the elevator is represented at PJSC "Novorossiysk grain processing plant" (250 thousand tons) and Grain Terminal KSK (218 thousand tons). The capabilities of the third exporter are more modest – 120 thousand tons, but there is an advantage in the capacity of the transshipment complex (2,400 tons/hour), which exceeds the same indicator of competitors. In terms of the speed of grain shipment to transport, PJSC "Novorossiysk grain processing plant" has a small advantage of 2,000 tons/hour, ahead of its rivals by only 400 tons.

According to the possibilities of using berths, the KSK Grain Terminal is the leader, using 3 berths for loading grain, one less for PJSC Novorossiysk Grain Terminal and PJSC Novorossiysk grain processing plant with one berth closes the top three but has a greater deadweight (72 thousand tons) than its competitors (65 thousand tons). Also on the Black Sea coast, the shipment goes through LLC "Grain Terminal Complex Taman" and JSC "Tuapse Commercial Sea Port", but their capacity

to increase volumes is much more modest. As a result of the rating assessment, the ABSB ports were located as follows (Table 1).

Table 1 – Calculation of the total port capacity criterion

	Standard	Novorossiysk Grain Terminal, LLC	PJSC "Novorossiysk grain processing plant"	KSK Grain Terminal	LLC "Grain Terminal Complex Taman"	JSC "Tuapse Commercial Sea Port"
Elevator capacity, thousand tons	250	0.5	1.0	0.9	0.8	0.4
Transshipment complex, total capacity, tons / hour	3,000	1.0	0.9	0.8	0.5	0.2
The passageway of grain shipment to sea transport, total capacity, tons/hour	2,000	0.8	1.0	0.8	0.8	0.4
Transport infrastructure						
number of berths	3	0.7	0.3	1.0	0.7	0.3
the maximum length of the mooring berth, m	325	0.8	0.8	0.4	1.0	0.8
maximum deadweight, tons	110,000	0.6	0.7	0.6	1.0	0.6
Grain transshipment volumes per season, thousand tons	4,897	1.0	1.0	0.7	0.5	0.3
Total value		5.3	5.7	5.2	5.2	3.0

In general, it is possible to identify a positive trend, the volume of transshipment cargo has more than doubled over 10 years, and grain has increased 2.5 times in the ports of the Azov-Black

Sea region. In connection with the announced course of expanding the country's export potential in the agro-industrial complex and within the framework of grain export, in particular, additional investments are required to expand the capabilities of ports. The greatest technical potential (Table 1) has PJSC "Novorossiysk grain processing plant", which justifies its long path to leadership, the company was established in 1994. LLC NZT, KSK, and the complex in Taman rank second in terms of elevator capacity, transshipment and shipment.

Now the leaders in shipping claim that there is sufficient capacity for such a volume of cargo, but in connection with the project to increase grain exports almost twice, there will be a double load on the logistics chains, and, therefore, further modernization and reconstruction of capacities are required.

All the ports under consideration are undergoing active technical reconstruction. For example, the NCSP Group approved an investment program in 2017 (65 RUB bn) for five years: the merger of two container terminals for servicing vessels of maximum deadweight, which can pass through the straits and handle up to 800 thousand TEU; the construction of two additional berths of the company to increase the deadweight of ships processed at the grain terminal to 110 thousand tons; the reconstruction of the Novorossiysk grain processing plant and NZT to increase the transshipment of grain over 9 million tons (now about 5 million tons).

The first stage of modernization of the terminal of PJSC "Novorossiysk grain processing plant" was completed in 2017 – a grain storage facility for 100 thousand tons was built and the capacity of the elevator was increased from 150 to 250 thousand tons. Now the second stage is being implemented – increasing the capacity of the grain reception complex: car reception – from 250 to 1000 cars per day, railway reception – from 200 to 400 wagons per day. Currently, KSK is increasing the capacity of the permitted draft of vessels from 12.6 to 14.6 m.

KSK Grain Terminal has started a large project to build a deep-water berth, which will allow it to receive vessels with a deadweight of up to 100 thousand tons. PJSC "Novorossiysk grain processing plant" in 2018 also completed a large-scale investment project, increasing the volume of transshipment, storage capacity, and shipping capacity almost twice. There are also several other large-scale projects.

The problem remains with the rolling stock of the railway and the autobahn. The increase in port capacity will not matter without linking these two modes of transport. The existing program for the development of the Novorossiysk transport hub (in the Federal Targeted Programme

"Development of the transport system of Russia until 2020") is not maintained, which prevents the implementation of the planned goal – to increase the capacity of the Novorossiysk station by 17 million tons per year.

Automobile approaches are another serious problem for the port's long-term development. Within the framework of the same Federal Targeted Programme, it was planned to build a road "Tsemdolina – Portovaya Street", running in the second tier above the railway tracks with direct access to the port. As of today, this project has been implemented.

In this regard, "the objective need to overcome the existing negative trends encourages the need for comprehensive development of the grain market infrastructure, the creation of sustainable mechanisms for institutional growth, which should be considered as a basic factor in optimizing the functioning of the Russian grain industry. The solution to this problem is complicated by the fact of Russia's accession to the WTO, which stimulates the growth and competition of grain importers and exporters in the domestic market, increasing the need to improve the quality of domestic grain exports and its diversification" [10]. Therefore, the logistics capabilities in the grain market should now be determined not only through the correspondence of distribution channels to the volume of the grown product, but also specifically measurable development prospects, taking into account the state's ability to invest not only in grain production but also in updating the infrastructure, expanding sales channels.

The uneven development of the regions also affects the quality of logistics routes. The decline in the importance of Siberia and the Urals in the policy of the state also leads to a decrease in the socio-economic well-being of these territories, which also affects the distribution channels of goods.

To ensure stable export supplies, including from the regions of Siberia, it is necessary to create new grain terminals in deep-water seaports in the South, Far East, and North-West of Russia, taking into account the geography of Russian grain markets. The formation of an export logistics system based on the harmonization of elevator and port capacities with the use of shipping routes meets the best world practice of mass grain transportation and creates sustainable incentives for the development of its production [7].

The experience of managing grain logistics in the United States is important, where the main reference point for the construction of elevators, equipment of port terminals, the concentration of transport capacities is carried out, on the one hand, taking into account the places of production and storage of grain, and on the other, the possibilities of traffic. Within the framework of the last thesis,

the orientation of demand for motor vehicles in comparison with the traditional railway carrier should be mentioned. In this struggle, motor transport wins due to higher tariffs for railway transport, the flexibility of the route and loading volumes, as well as lower investment costs for modernization and maintenance.

Recently, the demand for rail transport has increased significantly. This is due to two positive phenomena: an increase in the gross grain harvest (Central region, Volga region) and tighter control of goods transported by road. Statistics indicate an intensification of deliveries in the direction of Novorossiysk – the share of this method has increased from 30% to 50% during the season, the port of Kavkaz – from 1.3% to 2.8%, Taman – from 0.9% to 1.7%. Increased requirements in the field of road transport led to a reduction in the volume of grain transported to the level of permissible weight by almost half (up to 25-27 tons per unit of transport), which made the competition between these two options for transporting goods for export fairer.

According to experts, a little more than 40 thousand grain wagons are involved in the transportation of grain, of which more than 18 thousand wagons are subject to write-off. In the context of the reform discussed in the previous paragraph, aimed at increasing the volume of grain exports to 60 million tons by 2024, it will be required, according to modest estimates, 22-24 thousand new grain wagons, with a total cost of 79-86 billion rubles [11]. In this regard, the issue of financing is no less urgent for railway operators, since the main source of financing and not the cheapest is leasing (about 70% of all investments in railway transport), which in the future, without reasonable support from the state, may lead to an even greater increase in that part of the railway tariff, which predetermines the need to compensate owners for the modernization and expansion of the rolling stock.

Also, the transportation of grain by rail determines, among other things, the need for additional costs for the services of elevators, which are absent when transporting by road directly from farms, make it difficult to compete in the tariffs of railway and motor transport at distances of less than 400 km.

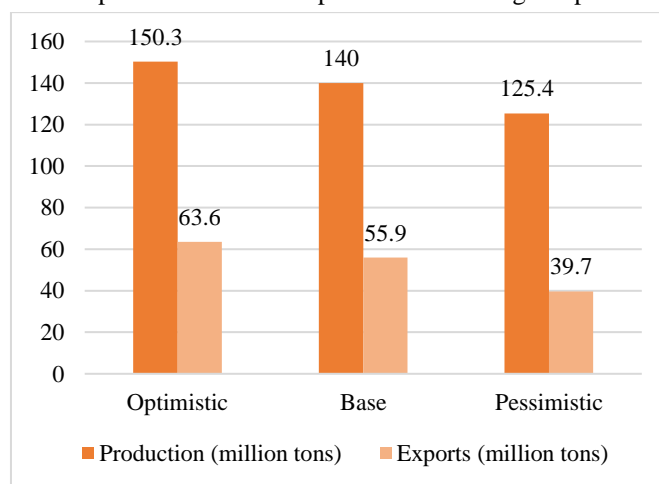
Although both types of transport face the same problem – an extremely high degree of wear and tear of transport – according to experts, the level of wear of wagons is 40%, a similar picture is observed in heavy trucks. Also, manufacturers note the shortage of wagons during the period of intensive trade turnover and the low speed of transshipment operations. In the aggregate, the shortcomings in multimodal transport by road and rail may lead to a weakening of Russia's

competitive export position. Even now, international carriers offer their services in the domestic transport services market, and with the use of financial instruments, they get the opportunity to become co-owners of distribution channels on the logistics routes of domestic products, including the export of domestic grain.

Experts also see a certain potential for solving this problem in the digitalization of the transportation process, which will improve the efficiency of cargo transportation planning. Several pilot projects to create an electronic system for planning and controlling cargo transportation are already being implemented by Russian Railways together with stevedoring companies [12].

Russia has been an active participant in the grain market in the last few years. Despite the decline in purchases by Egypt (from 65% to 45% of grain imported into the country), Russia actively cooperates with Turkey (the increase in exports last season was 14%), with the countries of South-East Asia, South Africa, and in the future, with other countries of the African continent, including in trade with Sudan. According to the Strategy for the Development of the Russian grain complex until 2035, approved by the Government in August 2019, the main task of the grain market is not only to meet its own needs to maintain food security but also to increase Russia's export potential in the global grain market [13]. The strategy has three options for the development of the domestic grain economy (Fig. 3).

Figure 3 – Options for the development of Russia's grain potential [13]



Even with the most pessimistic forecast, it is planned to export grain at a minimum value of about 90% of the exports of the 2018/2019 season. Therefore, in the future, the shipment of grain abroad will either be at the current level or as experts predict, increase according to the basic or

optimistic option, which will require the expansion of infrastructure capabilities. According to experts, the total capacity of the terminals is now sufficient and amounts to about 50 million tons. In the future – expansion of the capacity of the terminals following the concluded contracts and planned investments: 1.6-fold expansion of the capacity for grain transshipment in the ports of ABSB – from 45 million to 73 million tons due to the construction of a new terminal in the port of Taman, the expansion of all terminals in Novorossiysk and the capacity of small ports of the Sea of Azov.

For example:

the construction of the Taman Grain Terminal (TGT) by the United Freight Forwarding Company (UFFC) in the south of Russia will increase exports to Africa, the Middle East, and Southeast Asia by 12.5 million tons,

the construction of a grain terminal in Ust-Luga will increase the capacity of the Baltic ports three times – from 3 million to 9 million tons. This will solve the problem of transshipment not through the Russian maritime infrastructure, but the ports of Latvia (about 4 million tons per year),

project for the construction of a specialized grain terminal in the Baltic ports on the territory of the Vysotsk seaport with a capacity of 4 million tons per year with a wheat processing production complex (Technotrans Group of Companies),

terminal construction project as part of the creation of a universal transshipment complex in Primorsk;

the project of modernization and expansion of the existing terminals in the ports of the Caspian Sea (Makhachkala, Olya, Streletskoye) to expand the possibility of transshipment of grain – from 2 million to 4 million tons,

grain terminal construction project in the port of Astrakhan,

the launch of two-grain warehouses and the project for the construction of a new terminal with a capacity of 5 million tons in the port of Sovetskaya Gavan. "Vladivostok Commercial Sea Port" (VCSP), " Vladivostok Sea Port "Pervomaysky" (VSPP).

Even though the capacity of grain terminals will grow faster than the volume of grain exports, a surplus of capacity (as a negative phenomenon) should not be feared. Firstly, because the terminals rarely operate at full capacity and the shipment depends on many factors, including weather conditions. Secondly, the more "exit points" for grain exports, the more opportunities and fewer problems with shipment will be for exporters. The growth of export shipments, in turn, will encourage enterprises to increase the volume of grain production.

4. Conclusion

The review of statistical data on the problems of grain transport logistics identified the lack of development of the technical component of the transport system, the uneven concentration of grain flows along the established routes due to the lack of terminal capacity, and the slow implementation of advanced logistics technologies. Countries that have been carrying out active international trade in the last decade do not ignore the development of export channels, seeking their maximum automation and debugging. The large extent of the Russian territory, the presence of a large number of transshipment points (more than 700 railway stations), the insufficient capacity of the railway stations themselves, the disparity in the distribution policy (in one composition there may be wagons of several exporting companies with different types of grain, intended for sea transportation also by different carriers) does not allow building a single route of grain movement from grain farms to the port of shipment.

This problem can be partially solved through the creation of distribution centers that will group transport orders of individual grain farms for loading into wagons following a specific route to the port, which will reduce the number of transshipment points tenfold, and, consequently, the time of goods movement. The creation of another intermediary in the person of distribution logistics terminals can lead to an increase in transaction costs and, in the absence of appropriate optimization, will reduce the competitiveness of Russian grain (having a price higher than the average market) on the world market.

The solution of the issues of reasonable distribution is of particular importance for the deep-water ports of Novorossiysk and Tuapse – most of the grain flows for export go exactly this route. The lack of road interchanges, coupled with large-scale projects to reconstruct the capacity of grain elevators and transport infrastructure (as mentioned earlier) makes projects to develop the capabilities of the railway more of a priority.

In addition, farms located in Western Siberia and the Altai Territory send their products to the ports of the Far Eastern basin with the help of the railway. The development of the seaport infrastructure of the Far East requires an increase in the capacity of the main transport interchanges: the Baikal-Amur Mainline (BAM), the Trans-Siberian Railway (Transsib). On the one hand, the state determines the need to increase export potential, and on the other – does not carry out a comprehensive modernization of the logistics distribution system. The high tariffs for Trans-Siberian Railway transportation make many goods that could be exported and transshipped through the Far

Eastern ports uncompetitive. The use of road transport over short distances (up to 1.5 thousand km) becomes unprofitable due to the limited weight and degree of a load of land transport. Therewith, the capacity of the Far Eastern ports exceeds the capacity of railway transportation and the capacity of stations in the ports of shipment by 1.5 times. Serious investments are required, as well as plans for the rapid and effective modernization of the Trans-Siberian Railway and the Baikal-Amur Mainline. One of the options for solving the problems is the signing of concession agreements, the development of a private-public partnership with JSC "Russian Railways", and therefore with the state. This option would interest many private investors, but it would require a change in the concept of railway transportation and some mutual concessions from Russian Railways itself.

Thus, the realization of the transit potential of the country, the expansion of the sales territory is possible not only in the implementation of large-scale projects in the agro-industrial complex but also through the development of distribution channels for the movement of goods. For grain exports, the development of not only the possibilities of ports but also the railway plays a special role. Transport infrastructure should be the first object of investment for modernization and development. In this case, there will be a multiplier effect – the growth of grain transportation by rail will not only expand the country's export opportunities, increasing the flow of money to the budget but also expand the infrastructure capabilities of depressed regions, thereby ensuring the development of related industries.

The capacity of grain terminals will be increased to 80-85 million tons as follows from experts' forecasts, in the period until 2024, according to large-scale structural changes in the economy, including in the field of grain infrastructure.

In this regard, the task of the state is to monitor the industry, to take responsibility for the results of its functioning, which in turn does not mean its monopolization. The spontaneous existence of the grain market, coupled with supporting farms, as well as direct administration with large-scale reforms, can slow down both the functioning of the entire agro-industrial complex and the separate production of grain crops. It is possible to develop new areas of grain sales within the framework of large-scale accelerated projects adopted by Russia in 2018, aimed not only at the agricultural sector itself but also at expanding and modernizing the transport and logistics chains of the movement of agricultural products abroad.

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