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OVERVIEW OF THE INLAND WATERWAY TRANSPORT OF UKRAINE AND THE WAYS OF ITS DEVELOPMENT

***Summary:** Over the past three decades, both passenger and cargo transportation on Ukrainian rivers has practically ceased. This gap in cargo transportation is currently occupied by railroad and automobile transport, which explains the fact that various types of riverboats are extremely rare. Though paradoxical, it is nothing else than lost opportunity for national economy and Ukrainian society, as river transport is considered the most ecologically clean, safe and economically beneficial type of transport. To restore its importance and role as a significant alternative for all parties involved in the process of cargo transportation in 2020 on the government level, the law "On Inland Water Transport" was implemented. In addition, the relevant ministry has developed a development strategy for inland waterway transport in the years 2021-2031, as well as the action plan for its implementation. The document clearly presents the future of inland water transport and describes the steps to be taken for the development of the sector, and the river navigation was again developed and used for freight and passenger traffic. The strategy also takes into account the two current trends that are now observed all over the world - environmentally friendly transport and smart mobility, which meets all current EU standards for river transport.*

***Key words:** inland waterways, river transportation, fleet renovation, cargo carriage.*

Transport as an infrastructure sector plays a significant role in the development of the national economy, providing timely and efficient freight and passenger transportation, promoting the integration of Ukraine's economy into the European and world economic systems and one of the most essential conditions for the successful functioning of the economy as a whole. One of the significant impacts is the development and construction of new, as well as modernization of existing infrastructure projects, which in turn require building materials, raw materials, high-tech and unique equipment is the effective utilization of inland waterways and river transport.

Due to the presence in Ukraine of such waterways as the Dnipro and the Danube, the transportation of various goods by water transport is becoming more and more in demand every year. With the help of water transport, it is possible to deliver large consignments of raw materials, construction materials and agricultural products to the deep sea port faster and cheaper for their further transshipment and export. The use of ships of river-sea type allows to carry out export delivery directly from the port of loading. But even taking into account its attractiveness, the river logistics segment has its own peculiarities. In addition, the benefits of river transportation can be made only if this segment of logistics is available. In fact, the national fleet uses the legacy of the Soviet era of 1960-1990s. During this period, intensive construction of vessels designed exclusively for operation on rivers, which are the most important inland waterways for any country, was carried out. At that time, the issue of fleet renovation was considered very seriously, and a certain type of ship was built in whole series, up to 200 units. With such a tremendous pace of construction, the fleet on the rivers was represented almost everywhere, and not only in cargo transportation and northern traffic, but even as "floating shops", which now sounds incredible.

Cargo transportation by water transport has decreased by 13.3% for the past years, according to the Association "Rivers of Ukraine". According to it, the

volume of cargo transportation by inland waterway transport fell from 18.2 million tons in 2019 to 15.8 million tons in 2020. In particular, inland water transport was carried out: Dnipro - 11.2 million tons, Danube - 4.1 million tons, Southern Bug - 0.5 million tons (Fig.1).

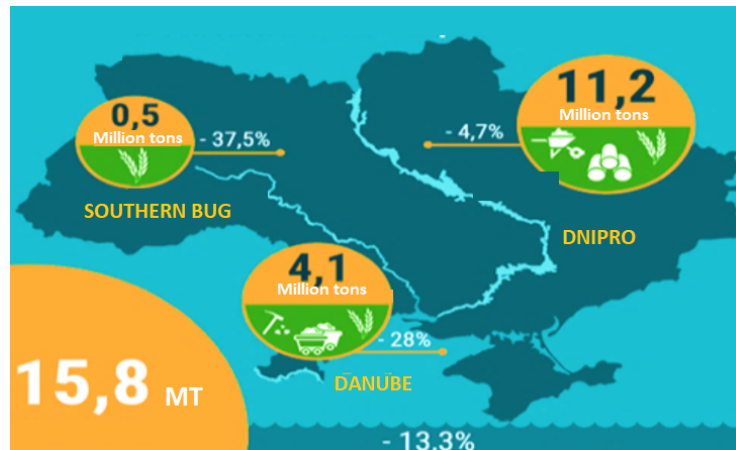


Fig. 1. Volumes of cargo transportation by inland water transport of Ukraine

Largely, the results of cargo transportation were affected by the reduction of grain transportation on navigable rivers. Among other things, this is due to a decrease in harvest volumes in Ukraine due to weather conditions. In 2018, 16.5 million tons of cargo were transported on the rivers of Ukraine. Also, for 11 months of 2019, 10799.2 thousand tons of cargo were transported along the Dnipro River, which is 19.15% more than in the same period in 2018, when 9063.1 thousand tons of cargo passed along the river.

The main types of cargo were coal, building materials, metal products, ore and grain. The reduction in the latter category caused the main drop, analysts say. The reason was the reduction of harvest in Ukraine.

Freight traffic on the Dnipro decreased by 0.44 million tons. However, the decrease in the volume of grain transportation here was 27.2%. They decreased to 3.5 million tons from 4.8 million tons. The losses were compensated by increasing the transportation of construction materials, metal products and oil products.

On the Danube, river transporters lost 28% of cargo for the year. By the way, in 2019, there was also a drop in inland waterway transportation by 6% to 5.6 million tons. Iron ore, coal and grain are mainly transported by this river. In 2020, the largest decrease in inland waterway transportation (by 1 million tons) was observed in the iron ore segment. The decrease here was 29% to 2.3 million tons. According to the Ukrainian Sea Ports Authority, more than a third of transshipment in January-May 2019 - more than 21.9 million tons, was only transshipment of bread cargo. Compared to the same period last year, the volume increased by almost a third (+ 5.5 million tons). The decrease in the volume of transit traffic since 2014 demonstrates a steady trend in the share of transshipment that was delivered to domestic ports. Seaports, with a total capacity of 313 million tons, have been demonstrating growth over the past two years, and are an integral part of the transport and production infrastructure of the state, but at the same time need to attract investment in reform and development due to almost 80% wear and tear.

Currently, the Ukrainian fleet is very underdeveloped. However, Ukraine is one of the leading exporters of grain cargo and metal, and in general, more than 135.2 million tons of cargo are transshipped through the ports of Ukraine. These figures were higher in 2018 for the second consecutive year after the four-year period of 2012-2016, where private operators account for a significant share of up to 70% of exports. According to the baseline development scenario, Ukrainian ports have prospects to reach 184 million tons of cargo handling per year and in the long term 246 million per year. In 2017, the number of ports - "millionaires", whose cargo turnover exceeds one million tons, increased to ten. In the first five months of 2019, Ukrainian seaports handled more than 61.4 million tons of cargo, which is almost 7 million tons (or 13%) more than last year. In terms of transshipment of bread cargo and ore, the ports have already exceeded the transshipment indicators of the first half of 2018. In terms of cost effectiveness (an indicator of economic efficiency of cost-benefit analysis), the

railway is second only to river transport. However, it is still underdeveloped in Ukraine and cannot boast such a wide network of coverage and penetration in the regions. In addition, due to the peculiarities of the Ukrainian climate, river transport depends on the season, so it is supplementary.

The Russian armed aggression against Ukraine and military actions on the territory of Ukraine have demonstrated the importance of reasonable diversification of logistics chains and actualized a number of problematic issues related to logistics constraints. These restrictions are imposed by the existing infrastructure, which was created according to Soviet standards.

Table 1

Profitability of operating and all activities of enterprises by certain types of economic activity %

| | The level of profitability (loss) of operating activities of enterprises of water transport | The level of profitability (loss) of all activities of enterprises of water transport | The level of profitability (loss) of operating activities of enterprises of land and pipeline transport | The level of profitability (loss) of all activities of enterprises of land and pipeline transport |
|------|---|---|---|---|
| 2015 | 1,2 | -2,9 | 1,7 | -3,2 |
| 2016 | 2,0 | 0,7 | -0,2 | -0,7 |
| 2017 | 1,9 | 2,0 | -8,2 | -9,5 |
| 2018 | 1,7 | 1,6 | -9,7 | -11,5 |
| 2019 | 6,9 | 5,6 | -2,3 | -5,0 |
| 2020 | 12,3 | 3,0 | 5,1 | 7,1 |

Water transport of Ukraine in terms of cargo turnover ranks is third after rail and road transport, while in quantitative terms its share is very small and the amounts to about 1%. The vast majority of transportation is carried out in foreign voyages. The volumes of such transportation have been steadily increasing over the past decades and currently account for more than 95% of the total. One of the main problems of sustainable development of maritime transport is, first, obsolete and physically worn out dilapidated port equipment

(especially cargo handling facilities) and fleet. Thus, the average age of Ukrainian merchant ships exceeds 15 years, which does not allow them to enter the ports of some Western countries. The port infrastructure lags far behind modern port technologies, which significantly affects both the productivity of ports, which is only up to 50% of the productivity of developed foreign ports, and the efficiency of other modes of transport (primarily rail) related to cargo handling. In addition, the vast majority of merchant ships belong to the class of small vessels. If we compare the displacement of vessels of the Ukrainian merchant fleet with similar indicators in European countries, it turns out that it is 3-5 times less. Structural reorganization of the merchant fleet in the direction of increasing the average displacement of vessels will help to solve a number of problems of the industry, but requires significant investment.

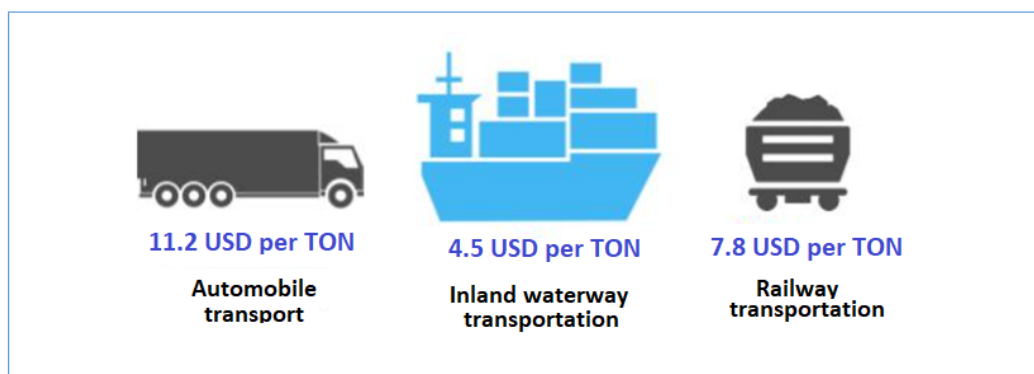


Fig. 2. Internal transportation cost for a distance of 100 km

On the way to European integration, both river transport and maritime transport face similar problems, namely, morally and physically outdated material and technical base, fleet with exhausted technological resources, outdated technologies of cargo operations, insignificant share of packaged cargo in the total volume, low level of transportation volumes under the "tug-barge" scheme. The national inland waterway transport is unable to compete with road and rail transport in terms of tariffs and services provided. It is mainly focused on the transportation of consignments, among which construction materials, grain, coal, ore prevail. It should be noted that the efficiency of Ukrainian water

transport is quite low and is about 20% compared to the same indicator in most European countries that have similar resources. Inland water transport is mostly used and exists mainly for bulk cargoes but not for container transportation. There is no systematic approach, schedule and regularity of transportation. In addition, all grain cargo owners rushed to this type of transport because it is the cheapest. In addition, it turns out that now there is a failure of river ports to provide clear and efficient conditions and procedures for the ships turnover. There is an accumulation and congestion of vehicles in logistics hubs, difficulties with loading, scheduling, etc. In order to compete effectively with the prevailing road transport it is necessary to develop a set of measures for planning and control of cargo flows, taking into account the current situation in the ports, develop the barge segment of the fleet, ferries.

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