

INLAND WATERWAYS IN URBAN LOGISTICS: EUROPEAN EXAMPLES AND PERSPECTIVES IN UKRAINE

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Key words: urban logistics, inland waterways, logistics

Effective organization of urban logistics is extremely important in terms of the constant growth of the population of cities. The existing infrastructure does not always cope with increasing traffic. As a result, there are problems with road congestions and the entrance of freight transport in many cities around the world. At the same time, inland waterways transport is not considered a suitable and obvious mode. However, it provides exceptional benefits in the handling of smaller deliveries within the network of city waterways, like opportunities for intermodal integration or being environmentally friendly.

Usually, only water transport is not used to deliver goods within the mainland. More often, its use implies the presence of an inter- or multimodal sequence of transportations, creating integrated logistics chains. Inland waterways express their uniqueness in being the only land infrastructure that is not subject to congestion problems since their communication paths are laid in advance and the only thing that requires constant maintenance is the infrastructure of the port or terminal [1].

It should be mentioned that that this transport mode has the free capacity: from bulk materials on barges to small ferry operations. This characteristic strongly highlights the advantage in operations within the area with the absence of any other ways, except water. Moreover, the application of waterways operations may be beneficial in case of the presence of severe obstacles on using roadways and railways, for instance, road width or restrictions on cargo weight.

On the level of the EU, inland waterway transport is supposed to be the most environmentally friendly mode due to low emissions of CO₂, less noise pollution, etc. The White Paper on transport proposes to shift one third road traffic on other modes, especially on waterborne, because of its features of efficiency and sustainability [2]. To improve environmental performance, certain governments may grant subsidies or other supporting offers for companies to implement the inland waterway component in their operations [3]. To see how these benefits are applied, it is essential to explore the real examples.

As examples of providing inland waterways' activity in the metropolitan area, the best will be cities and regions with an extensive waterway network or where rivers and channels located favourably for the potential use. The stimulus for implementation of waterway transport inside cities is in limitations on road transport, so it becomes less attractive. The most prominent case is the situation in cities of the Netherlands.

One of the most famous projects of implementation waterborne transport into city logistics are The municipal Beer Boat in Utrecht that supplied food and drinks, the Mokum Mariteam City Supplier in Amsterdam, which offered cargo transportation on a commercial basis, and the DHL floating warehouse-distribution centre [1].

These solutions, indeed, helped to satisfy the demand in transportation within the downtown, providing construction and waste-collecting actions, etc. However, the cargo capacity was limited due to the size of bridges and channels, relatively high handling costs, difficulties with construction and operation of handling facilities in favourable locations, and the lack of a particular desire from the side of the local authorities to promote this mode as an alternative [4].

In 2012, a French project of delivering grocery to shops in Paris by waterway and providing last-mile delivery by trucks showed that shipping 48 containers within the distance of 20 km avoided approximately 450000 km of road traffic and 37% of carbon emissions possibly made by only-automobile shipment [3].

For providing such activity, a legal framework should be created. For instance, the law of Ukraine “On inland waterway transport”, which comes into force from 2022, establishes the conditions of operation of inland water transport, the use of inland waterways and coastal strips for navigation, the responsibility of shipowners, etc. But the competitive transportation market cannot appear due to the adoption of the law. Ukraine's inland waterways logistics is as uncompetitive as possible compared to other modes of transport, as the Ukrainian river fleet and port facilities are much outdated and mostly idle, and there is no real mechanism for forming tariffs.

Nevertheless, opportunities for using urban waterway transport may be successful in Ukraine in case of full involvement of all potential stakeholders. For instance, there is an opportunity for Kyiv to reduce traffic flow over bridges that require reconstruction via providing distribution services for clients from both banks of Dnieper. Another idea is to include cross river operations in the network of regional intermodal transportation. But some rivers have inconsistency with the requirements for navigability that is why this proposal may not be suitable for all waterways.

To sum up, waterways are still under-exploited and potential as a logistic resource on the urban scale. They can be used in different aspects of distribution and shipping without a significant impact on ecological issues. However, it is more difficult and complex to handle this kind of operations, not mentioning the need for external (preferably governmental) financial support. But with the right approach, the case of using inland waterways in urban logistics may be successful enough to continue its spreading and efficiency development.

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