



## Assessment of inland waterways system at TRITIA area

Responsible Partner:  
PP4 Transport Research Institute, JSC.

Contribution partners:  
PP1 Upper Silesian Agency for Entrepreneurship and Development LTD.  
PP3 The Union for the Development of the Moravian Silesian Region  
PP5 Dopravní projektování  
PP6 University of Žilina

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# 1. Description of freight inland waterway market in the TRITIA area

## 1.1. Czech republic

Subjects with links to water transport are divided into state-owned (which take a care about infrastructure and infrastructure operations) and private owned (which owned most of inland ports and take a care about transport):

- STATE OWNED:
  - The management of the infrastructure of existing watercourses is the subject of activity in the Czech Republic of 4 state-owned river basin enterprises, the waterways are in the competence of the state-owned enterprises of Oder River Basin, Morava River Basin, Elbe River Basin and Vltava River Basin.
  - The management of waterway infrastructure, is legally under the responsibility of the Ministry of Transport, where its organizational component - the Directorate of Waterways of the Czech Republic
  - The supervision of waterways and waterways is the subject of the navigation authority, ie the State Navigation Administration.
- PRIVATE OWNED:
  - companies performing water transport, port service and transshipment

As the Silesian map is the only regular waterway in the Moravian-Silesian Region Slezská Harta dam, the performance of the state and private sphere of activities in the water transport is minimal and is zero in freight water transport at present.

## 1.2. Poland

There are two groups of entities on the inland waterway market:

- State units, among them we can indicate:
  - Ministry of Maritime Economy and Inland Navigation (national administration) - the most important tasks are: shaping, protection and rational use of water resources; maintenance of inland waterways, excluding inland waterways of special transport importance; flood protection, including construction, modernization and maintenance of water devices to protect against floods, and coordination of projects serving the protection and flood protection of the state; construction and modernization of inland waterways; international cooperation on border waters and included in the system of international waterways; water management in Poland; international cooperation with individual countries and institutions within the EU in the area of the Ministry's competence in order to implement the national development strategy and exchange experience;
  - State Water Holding - Polish Waters (national administration) - at all levels of the structure operate three basic subject areas:
    - Flood and Drought Protection Department- the flood and drought protection department deals with all matters related to these phenomena: planning, project

preparation and implementation of investments as well as maintenance and operation of hydrotechnical facilities. The Division also conducts issues related to providing water for agriculture and issues related to monitoring the hydrological situation and crisis situations,

- Water Services Department - deals with all matters related to water users, primarily the issuing of water-law permits, charging for water services, water management control, cooperation with various water users, including in matters relating to inland waterway transport, energy, industry, tourism and recreation.,
- Water Management Department - deals with issues related primarily to the implementation of EU directives, such as the so-called The Water Framework Directive, the directive for the protection of marine waters, the municipal wastewater treatment directive or the Nitrate Directive. In addition, the department deals with matters related to protected areas, such as NATURA 2000. Also in this section, the Water Management Information System is run.

As part of the operation of the National Water Management - Polish Waters, regional and local administrations operate: the Regional Water Management Board in Gliwice and the Catchment Management in Gliwice, Katowice, Opole. An additional body is: the Inland Shipping Office in Kędzierzyn Koźle (regional administration) - the Inland Shipping Office in Wrocław, similarly to other territorial governmental bodies of this type, takes care of the safety of navigation on inland waterways.

- Private units - represented by inland port managers (eg. ŚCL SA in Gliwice) and operators operating in inland transport (transport and port services), e.g. OTL Logistics, PCC Intermodal SA.

### 1.3. Slovakia

Slovak Water Management Enterprise, š.p. (SWME) was established on the basis of a decision No. 3554/1996-100 of the Ministry of Agriculture of the SR of 19 December 1996 with effect from 1 July 1997. Registered seat of SWME Enterprise Head Office, š.p. is located in central Slovakia, in the historical town of Banská Štiavnica. The foundation scope was transferred from May 1, 2003 from the Ministry of Agriculture to the Ministry of the Environment of the Slovak Republic. The SWME has a national competence. It has got four branches such as OZ Banská Bystrica, OZ Bratislava, OZ Košice and OZ Piešťany, established on the basis of natural catchment areas (enterprise branches - i.e. former independent state enterprises of the Danube River Basin, Váh River Basin, Hron River Basin and Bodrog and Hornád River Basin) SWME manages 33,673 km long watercourses, 295 water reservoirs, 3,158 km of protective levee and 1 605 km of canal network. The total catchment area is 49 034 km<sup>2</sup>.

Slovak Water Management Enterprise (SWME) - administrator of watercourses and catchment areas in Slovakia. SWME, š. p., is classified as strategically important state-owned enterprises with a modified management method because it also has asset which, according to the Constitution of the SR (Article 4), is exclusively state-owned. It provides care for watercourses and tangible fixed assets built on them, cares for the quantity and quality of surface waters and ground water. The part of the activities of Slovak Water Management Enterprise has the character of performance in the public interest - it is primarily flood protection and the creation of navigation conditions.

SWME:

- manages the entrusted watercourses and water management works and responsible for them,
- performs administration of boundary rivers and specific activities resulting from agreements between the Slovak Republic and the neighbouring country,

- ensures the supply of water from the watercourses and from the water basin, including its use for the production of electricity,
- performs securing activities for protection against adverse effects of water on watercourses and water management works, solves tasks during floods,
- carries out construction installation and maintenance work, the mining of river materials, the mining and production of aggregates of stone and the excavation of trees growing outside the forest,
- ensures effective protection of water, watercourses and water management works,
- monitors and evaluates the quality of water of water courses, water abstraction and other water treatment,
- sets out waterway,
- performs surveillance activities in protected water management areas,
- maintains sufficient water in ecosystems, revitalizes the environment to preserve the original habitats in the area (wetlands, recovery of dead river channel, etc. - e.g. National nature reserve (NNR) Šúr, Special Protection Area (SPA) Senianske rybníky, Medzibodrožie (SPA)),
- performs also other tasks arising from the Water Act, as amended, and related legislation.

#### 1.4. Summary of the freight inland waterway market in the TRITIA area

The Czech Republic has only Elbe waterway, but it does not have to complete 2 navigation stages - because this waterway is unreliable and the performance has dropped below 1% of total transport. The Moravian-Silesian Region has no operational waterway, so freight water transport does not exist here (partial attempts were made in the 1970s). The increase in the usual values in Western Europe is not possible without structural modifications. In the Moravian-Silesian region, this leads to a disadvantaged region (according to the TEN-T principles, the region belongs among those who should have high-quality road, rail and water transport). This is particularly true for companies that manufacture oversized goods against European and world competition, since the cost of transporting these units other than by waterborne transport is not acceptable.

The current network of waterways in Poland has been shaped by a natural layout of rivers and canal connections built mainly in the XVIII and XIX centuries. The national waterway network covers 3654 km. The relatively high network density indicator is evidence of natural conditions favorable for the development of inland waterway transport. Pursuant to the Regulation, the requirements of classes IV and V for roads of international importance, allowing the operation of ships with a tonnage of over 1000 t, meet in Poland about 6% of their length. It is a total of 214.1 km of roads with parameters necessary for modern shipping.

Inland waterway is not important in the transport of goods in Poland. The biggest problems for the transport use of Polish inland waterways is the diversity of their parameters (they do not form a uniform system). The infrastructure of shipping routes (ports, wharfs, locks and others) is also deteriorating as a result of underinvestment.

As a country with a well-developed river network compared to Europe, Poland has a small share of cargo transport by river transport in total onland freight transport - approx. 0.3%, while the share of inland waterway transport in some European Union countries is at a higher level. In 2017, 5778 thousand were transported in Poland by inland waterway. tons of cargo and 877 million tonnes of transport work, thus noting a decrease in freight transport by 432 thousand in relation to the previous year. tonnes (by 7.0%), with a simultaneous increase in transport performance by 45 million tkm. In Poland, in the structure of transported cargo in 2017, as in previous years, the transport of goods from the group of metal ores and other mining and quarrying products (41.7%) and hard coal (17.7%) prevailed. In addition to the carriage of goods, inland waterway transport carries passengers, which are part of the tourist offer. In Poland, the number of passengers transported in 2017 was 1262 thousand. and increased compared to 2014 by 224,000

The possibility of an increase in cargo transport by inland transport in Poland depends on improving the parameters of waterways.

The inland waterway transport sector in Slovakia is liberalized from the point of view of access to business, but conditional on obtaining the appropriate license enabling operation of passenger or freight transport. The majority carrier and operator of waterway transport on the Danube in the Slovak Republic is the Slovak Shipping and Ports, Ltd. Bratislava (SPaP, a. s.), which focuses on freight transport and a separate passenger transport division, provides transport services for passengers as well by its own vessels.

In addition to passenger transport and transport of goods SPaP a.s. ensures transshipment, stock and partly also distribution service by its own facilities in the decisive Slovak Danube public ports of Bratislava and Komárno, where provides services (including fuel delivery and waste collection from vessels) to other domestic and foreign carriers. In addition to SPaP, some other private companies are already operating today in the Slovak Republic waterway transport, but with fewer vessels and port facilities, e.g. CreditConsult-cargo inc.

Commercial navigation is carried out in the length of 2 411 km (from Kelheim to the estuary of the Danube into the Black Sea), which means that Slovakia is also a transit country, so many foreign carriers also use the waterway.

There is a planned the Váh waterway in the Žilina region, which is currently not in operation and therefore no statistical data on freight transport is available.

**Table 1 Subjects in the inland waterway transport at TRITIA area**

Country	Inland waterway infrastructure administrator	Freight inland waterway transport operators	Passenger inland waterway transport operators
Slovakia <sup>1</sup>	Slovenský vodohospodársky podnik, š.p. (Slovak Water Management Enterprise, state enterprise)	Slovenská plavba a prístavy, a. s. - SPaP (Slovak Shipping and Ports) KreditConsult - cargo s.r.o.	Slovenský vodohospodársky podnik, š.p., závod Dunaj (Slovak Water Management Enterprise, state enterprise, section Dunaj) Slovenská plavba a prístavy - lodná osobná doprava, a. s. (Slovak Water Management Enterprise - passenger transport)
Czech republic	Investment, inland ports operation - administration, operation and maintenance of new waterways Ředitelství vodních cest České republiky administration, operation and maintenance of present rivers Povodí Labe, Povodí Vltavy, Povodí Moravy, Povodí Odry	ČSPL a.s. - Děčín České přístavy a.s. - Praha EVD - Sped s.r.o. - Praha	Only sightseen tours and ferries.
Poland	Planning the development of the inland waterway network (Ministerstwo Gospodarki Morskiej i Żeglugi Śródlądowej) Planning and supervision of inland waterway investments (Ministerstwo Gospodarki Morskiej i Żeglugi Śródlądowej) Financing inland waterway investments (Państwowe Gospodarstwo Wodne - Wody Polskie, Regionalny Zarząd Gospodarki Wodnej w Gliwicach) Monitoring of inland waterway infrastructure - Państwowe Gospodarstwo Wodne (Wody Polskie, Regionalny Zarząd Gospodarki Wodnej w Gliwicach) Urząd Żeglugi Śródlądowej w Kędzierzynie Koźlu	ŚCL SA (manager of the Port of Gliwice), OTL Logistics (transport operator), Kędzierzyn-Koźle Terminale (manager of the port of Kędzierzyn Koźle)	Cruises: Marina Gliwice, Canal-Trans, also transport of individual entities

<sup>1</sup> www.mindop.sk

Country	Inland waterway infrastructure administrator	Freight inland waterway transport operators	Passenger inland waterway transport operators
	Information gathering on inland waterway networks (Ministerstwo Gospodarki Morskiej i Żeglugi Śródlądowej) Państwowe Gospodarstwo Wodne (Wody Polskie, Regionalny Zarząd Gospodarki Wodnej w Gliwicach) Management (administration) of inland waterway infrastructure and management of access to infrastructure (supervision) (Państwowe Gospodarstwo Wodne - Wody Polskie, Regionalny Zarząd Gospodarki Wodnej w Gliwicach)		

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The main carrier in inland navigation in the Tritia area is the OTL Logistics Capital Group. It is a leader in inland waterway transport in Central Europe and one of the largest entities on the inland waterway transport services market in the European Union. Its main advantage is its own fleet of about 800 units with a total load capacity of over 300,000. tone. In mid-2017, after a few years break, the company resumed coal transports by barges from Gliwice to Wrocław (in 2017 in the Gliwice port, 126.9 thousand tonnes of coal dust were handled). Thanks to the cooperation of the Silesian Logistic Center SA and OT Logistics, from the port to Wrocław from July to the end of the year, as many as 293 barges, each with a capacity of 500 tons, flowed out.

ŚCL S.A. with headquarters in Gliwice for 28 years manages the largest and most universal inland port in Poland. In Gliwice, the Oder Waterway connects Upper Silesia with the ports of Szczecin and Świnoujście and is connected to the network of Western European channels. ŚCL S.A. currently has a handling capacity of 1 600 000 tons of bulk goods per year.

Kędzierzyn-Koźle Terminale Sp. z o.o. is a private independent operator of liquid bulk products terminals. The company's activity is based on the development, construction, management and operation of warehouse and transshipment terminals that are a key link in the logistics chain for the flow of liquid bulk products. The company started work on reactivating the river port in Kędzierzyn Koźle. At the moment, however, the work has been stopped.

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**Table 2 Share of freight transport modes 2017 - country**

Country	Railway transport	Inland waterway transport	Road transport	Intermodal transport
Slovakia <sup>1</sup>	47 790 thous. tonnes (21,15 %)	1 780 thous. tonnes (0,79 %)	176 790 thous. tonnes (78,06 %)	5 000 thous. gross tonnes
Czech republic <sup>2</sup>	965 000 thous. tonnes - (16,9%)	1 600 thous. tonnes - (0,3%)	459 400 thous. tonnes - (80,4%)	14 700 thous. tonnes
Poland	222 523 thous. tonnes* (11,7 %)	5 788 thous. tonne (0,3 %)	1 747 266 thous. tonne (85,1 %)	Table 3

\*without shunting

In the statistics are road transport and inland waterway transport by vehicles/vessels registered in Czech republic only. Inland waterway transport includes cabotage and cross trade transport by Czech registered vessels with prediction of reciprocal transport in Czech republic by other states registered vessels.

The Table 2 and Table 3 present the percentage shares of particular modes of transport in the transport of goods. In Poland, 85.1% of freight transport is carried out by road; 11.7% by rail, and only 0.3% by inland waterway. Container intermodal transport covered 60 827 594 tons (including 18.1% railway, 19.7% car and 62.2% sea).

**Table 3 Transhipment of containers at intermodal terminals in 2017 (Poland)**

Transport mode	Transhipped containers
Rail	11 002 978 t
Road	11 975 979 t
Maritime	37 848 637 t
Total	60 827 594 t

The share of individual modes of freight transport in the Slovakia is calculated on the basis of transported tonnes of goods, including export, import, transit, domestic and international transport data. The most significant share in the total quantity of transported goods has road transport (78.06%), after which with significant differences it is followed by rail transport (21.15%). The lowest share on the total quantity of transported goods has inland waterway transport. Intermodal transport with 5 mil. gross tonnage does not count in the calculation of the share between transport modes, because its partial performances are inclusive in road transport, railway transport or inland waterway transport.

Road transport is long term the busiest transport mode in the Slovak Republic, it is characterized by high demands on infrastructure, which is still insufficient and there is a frequent congestion on various sections of infrastructure in the Slovak Republic (Bratislava, Košice, Prešov, etc.), but also in Žilina region (Žilina, Čadca, Ružomberok, etc.).

<sup>2</sup> Transport statistical yearbook of the Czech republic 2017

**Table 4 Share of freight transport modes 2017 - region**

Region	Railway transport	Inland waterway transport	Road transport	Intermodal transport
Žilina region	N/A	N/A	N/A	N/A
Moravian-Silesian region <sup>3*</sup>	12 400 thous. tonnes (19,97 %)	0 tonnes	49 700 thous. tonnes (80,03 %)	N/A
Silesian voivodship	N/A	139 300 t	Table 5	1 242,5 thous. tonnes**
Opole voivodship	N/A	1500 t	Table 5	45,01 thous. tonnes**

\*Notice: excluding transit traffic

\*\* Transport of goods in containers by national intermodal road transport by the voivodship in 2017

Data at regional level for Žilina region are not available

The total amount of transported cargo in the Śląskie region by road (import and export) in 2017 amounted to PLN 295,454 thousand. tone. On the other hand, in the Opolskie Voivodship it amounted to PLN 80,024 thousand. tone. Detailed data including flows within the voivodship, outside the voivodship and international are presented in Table 5.

**Table 5 Voivodship balance of goods road transport in 2017 (thousand tonnes)**

Region	Delivered				Received				Transport balance
	Total	Within the voivodship	To other voivodships	Abroad	Total	Within the voivodship	To other voivodships	Abroad	
Silesian v.	149 113	95 282	41 782	12 049	146 341	95 282	39 939	11 120	+2 772
Opole v.	42 098	21 293	17 502	3 303	37 926	21 293	14 534	2 098	+4 172

In Poland, road passenger transport combined with individual passenger transport accounts for 54.4% of all passenger transport services. On the other hand, passenger rail transport accounts for 43.5%. The inland navigation is of marginal importance in this area, which accounts for only 0.2% of passenger transport.

**Table 6 Share of passenger transport modes 2017 - country**

Country	Railway transport	Inland waterway transport	Road transport
Slovakia <sup>1</sup>	75 370 thous. persons (23,46 %)	121 thous. persons (0,04 %)	245 731 thous. persons (76,50 %)
Czech republic <sup>2*</sup>	183 000 thous. persons (3,5 %)	800 thous. persons (0,0 %)	5 016 000 thous. persons (96,5 %)
Poland (GUS)	303 001 thous. persons (43,5%)	1,262 <sup>4</sup> thous. persons (0,2%)	378 610 <sup>5</sup> thous. persons (54,4%)

\*Notice: Road (Public transport + individual car transport)

In passenger transport of the Slovak republic, the most significant share has up to 76.50 % road transport. Only the public bus transport is included in the statistics of road transport passengers (not including urban public transport and individual car traffic). Rail transport with a share of 23.46% is marked by a significant difference in road transport and the lowest share has inland waterway transport. A large share of road transport is mainly reflected in road infrastructure problems. In recent years, it has been possible to monitor the high growth of individual car traffic and the slow decline of road public transport. In case if individual car traffic (1,934,072 thousand passengers) is counted into share, road transport would have a share of up

<sup>3</sup> Statistical yearbook of the Moraviansilesian region 2017

<sup>4</sup> Including coastal shipping.

<sup>5</sup> Enterprises employing more than 9 persons; excluding urban transport

to 96.65% for transport work and the share of rail transport was only at 3.34%. In this respect, there is a potential movement of people from individual automobile traffic to public transport.

**Table 7 Share of passenger transport modes 2017 - region**

Region	Railway transport	Inland waterway transport	Road transport
Žilina region	N/A	N/A	N/A
Moravian-Silesian region <sup>3*</sup>	19 000 thous. passengers. (11,1 %)	Tourist cruises on one dam	152 000 thous. passengers (88,9 %)
Silesian voivodship	6,7% share of voivodship in railway transport in the country <sup>6</sup>	N/A	27 858 (7,36% <sup>7</sup> ) - transport by bus between cities <sup>8</sup>
Opole voivodship	1,7% share of voivodship in railway transport in the country <sup>9</sup>	N/A	11 189 (2,96% <sup>10</sup> ) - transport by bus between cities <sup>11</sup>

\*Notice: Road only public transport

For the survival of water freight transport in the Czech Republic, the construction of Děčín lock on Elbe is essential. Another necessary step is the navigability of the waterway from Poland to Ostrava in Va class and continuing the interrupted construction of the Donau-Odra-Elbe canal.

Guidelines on the modernization of inland waterways in Poland are presented in the document: "Assumptions for plans for the development of inland waterways in Poland for 2016-2020 with a view to 2030".

The main investments that should be made with the prospect of 2030 are presented in Table 8.

**Table 8 Major investments on the Odra River with a prospect until 2030**

Investments on the River Odra, which should be completed by 2020	Investments on the River Oder in the perspective of 2030
Finish renovation works on the Gliwicki Canal	On the Gliwice Canal, implement a phased reconstruction of the channel's positions up to V class
Finish the construction of the Racibórz water reservoir	Finish the construction of the Odra-Danube Canal
Start planning the construction of the Odra-Danube Canal in agreement with the Czech Republic	Complete the construction of the cascade of sluices along with adapting the geometry of the channel to the requirements of Va class
Modernize the locks located on the sewer section of the Oder.	On the canalization section of the Oder, complete the reconstruction of the other locks and reconstruct the riverbed
Modernize the existing ones and start construction of new slime stages on the Central Oder	
Perform necessary renovation works in the most limiting places in order to improve the navigational possibilities	

The following years are also a vision of the construction of missing water connections between the Oder and the Danube, and between the Oder and the Vistula. Regardless of the location of the Odra-Danube intersection, the Polish authorities have already commissioned the development of possible variants of this route on our territory in 2002.

<sup>6</sup> On the basis of the number of departures passengers.

<sup>7</sup> Share of the voivodship in road transport in the country

<sup>8</sup> Enterprises employing more than 9 persons (excluding urban transport services); data were divided into voivodships by entities location.

<sup>9</sup> On the basis of the number of departures passengers.

<sup>10</sup> Share of the voivodship in road transport in the country

<sup>11</sup> Enterprises employing more than 9 persons (excluding urban transport services); data were divided into voivodships by entities location.

The length of the whole combined route (river-canal-tank) was supposed to amount to 54.3 km and run between Ostrava and Kožle. By 2020, project and reconciliation tasks are to be undertaken between the Polish and Czech parties regarding the connection to Ostrava-Kožle, and then the construction of this road is expected to be completed by 2030.

The connection between the Vistula and the Oder is to facilitate the Silesian Channel, thanks to which it will be possible to include the Polish inland road to the Central European Water Corridor. The ten-stage Silesian Channel is to be 93 km long and meet the operational requirements for class Vb. The construction will require reconstruction of the existing infrastructure, road bridges and modernization of hydrotechnical facilities along the whole section of the route. It is assumed that the Silesian Channel will be partially or completely ready by 2030, and the cost of its construction will amount to approximately 11.0 billion PLN.

Renovation of the E-30 waterway, development and implementation of the adopted assumptions regarding the change of navigability class to IV on the Odra River will depend primarily on political decisions and national and international financial conditions. The scope of works at the border section was defined in 2015 in the Polish-German agreement and included, among other things, obtaining a stable depth of the river bed at the level of 1.8 m. According to plans, the modernization was to be completed in 2028. During the design both the winter flood protection and the improvement of the conditions of shipping and transport of goods were taken into account. The plans for the national section of the Odra River have been divided into two stages and include the construction of 15 water stages. By 2020, the Lubiąż and Ścinawa and Malczyce water sluices are to be modernized, which have been under renovation for years. Investment plans on the national section of the Odra River are presented in Figure 4.

Investments in the development of inland waterway transport in Slovakia are now mostly focused on removing bottlenecks on the Danube, improving navigation conditions and reconstruction of the port of Bratislava. In the future, it is also planned to develop the Váh waterway, but there is currently no schedule for the planned development. Commercial navigation (with certain restrictions) is only possible its lower part, from Komárno to Sereď (about 75 km). In its middle and upper part it is necessary to reconstruct or to construct facilities to overcome the difference in height (locks or ship lifts - dam Nosice), which would meet the requirements of the relevant class according to AGN.

There is no year-long waterway for freight transport in the Czech Republic. The Elbe waterway is limited by the absence of the Děčín lock (near Germany border). After the Děčín lock is completed, it will be a Va class from the Germany border to Mělník only. Other parts of the Vltava and Elbe waterways are only Class IV. There is no other waterway in the Czech Republic for freight transport. Other waterways are Class I only for hiking boats and waterways on dams.

Inland waterway transport is part of the transport system of the Slovak Republic, but only in the form of the Danube waterway. Due to the proportion of transported goods or passengers between modes of transport, its importance is very low, but with sufficient space for future development. From the point of view of the Žilina autonomous region, it will be important to complete the Váh waterway, but currently in the Žilina region within the TRITIA transport model, inland waterway transport will not be under consideration.

## 2. Legislative framework in inland waterway at TRITIA area

### 2.1. Czech republic

The inland navigation in the Czech republic are controlled by the Act. No. 114/1995 Coll. about inland navigation. Inland freight water transport is a free market, operators are private. No fees for using waterways are collected in the Czech Republic which results from international conventions and unpublished customs. Only registration and tax fees are required at present. After the construction of the Danube-Odra-

Elbe interconnection, charges are calculated on the channel sections 0,6 per tonne/km and 0,87 per tonne cross lock.

According to the documents in the table, water transport is covered by directives that deal with the mutual recognition of documents. Fees for using a waterway are not collected in the Czech Republic. Access to waterways is thus free under the conditions of one of the participating countries of the European Union.

If a navigation permit is required (new entitlement or regular renewal), the State Navigation Authority, which has a branch office in Přerov for the Moravian-Silesian Region, is designated for this purpose.

## 2.2. Poland

According to the Polish Classification of Activities , the water transport sector (division 50) consists of the following four sub-classes:

- Sea and coastal passenger transport (50.10.Z);
- Sea and coastal transport of goods (50.20.Z);
- Inland passenger water transport (50.30.Z);
- Inland water transport of goods (50.40.Z).

According to the most current data, the sector creates a total of about 1030 business entities (only active entities were included). Nevertheless, a number of business entities are in the process of liquidation or suspension, which increases the number of entities in the sector to about 1,200 business entities. It is worth emphasizing that the number of active entities is slowly growing.

The group of stakeholders in the sector is of diverse character which prevents precise defined sizes of this group.

Inland waterway freight is dominated by entities operating in the form of natural persons running their own business. Two other most popular ways to organize an enterprise are civil partnerships operating on the basis of an agreement concluded in accordance with the Civil Code and limited liability companies. It should be emphasized that there are significant differences between the share of the second and third most popular form of project organization. In the case of civil partnerships, their share was at the level of 14.29%, in the case of limited liability companies, their share was 5.92%. Changes in the inland waterway transport of goods have a much lower amplitude than other sub-sectors of water transport. The forms used to an extremely limited extent (less than a dozen active entities) are:

- Branches of foreign entrepreneurs;
- Joint-stock companies;
- general partnerships;
- limited partnerships.

In this sub-sector there was no operational activity carried out in the legal form: a state-owned enterprise, foreign representation, cooperative and limited joint-stock partnerships.

## 2.3. Slovakia

The basic legislation for the conditions setting out the conditions of the organization of waterway transport in the Slovak Republic is Act No. 338/2000 Coll. on Inland Navigation and on amendments to certain acts.

It is clear from the legal definition that: "Waterway transport is the transport of goods and persons by vessels on waterways for business purposes even if that business is not carried out on a regular basis".

Under this Act, the carrier is obliged to:

- carry out public waterway transport in accordance with the carrier's transport regulations (hereinafter the "Transport regulations"),
- publish the transport regulations on his/her website or other appropriate means; if the date of entry into force of the transport regulations is not stated, the transportation regulations shall be valid from the date of its publication on the website,
- provide, within provided transport and related activities, additional equipment for the vessels necessary for the operation, maintenance, technical inspection and anchoring of vessels and for care for the crew of the vessels, the passengers and the goods,
- create conditions for the carriage of combined transport cost units,
- insure liability for damage caused by the operation of the vessel and the crew activity of the vessel to passengers, consignors, consignees and third parties.
- carry out transport of passengers and goods with professional care and to take care of the safety and order in their facilities and on board,
- create conditions for transport of children, disabled persons, persons with reduced mobility, 5b) hand luggage and registered luggage and domestic animals,

Entrepreneurship in inland waterway transport is conditional upon obtaining a license issued by the Ministry of transport and construction of the Slovak Republic:

- a legal person having its registered office in the Slovak Republic, if the members of its statutory body are competent for legal acts, good repute and at least one member of the statutory body is competent,
- a natural person who has a permanent residence in the Slovak Republic, he/her is assumed to have legal capacity, good repute and competent.

The part of the conditions for obtaining a business license for inland waterway transport is legal capacity, good repute, competence and financial capability. In the case if the difference between the commercial assets and the obligations of the carrier reaches at least EUR 5 000 for each vessel used in the waterway transport, it is considered to be financially capable. The condition of financial standing must be observed by the carrier during the entrepreneurship. Under this Act, a person who is not convicted for an offense committed intentionally or for a negligent offense related to the activity to which the license is granted, the person shall be considered to possess good repute. The competence for business in inland waterway transport shall be demonstrated by a certificate of competence of the carrier that can be obtained on the basis of:

- without passing a professional examination, if the applicant has completed at least a second degree of higher education in the study field of transport, transport services, economics and business management, international business or sectoral economics and management or in a related study field obtained at a university in the Slovak Republic or education obtained abroad, which is equivalent in terms of its scope and content,
- without passing a professional examination, if the applicant has completed at least a first degree of higher education in the study field of business, law or transport machinery and equipment or in a related field of study obtained at a university in the Slovak Republic or education obtained abroad, which is equivalent in terms of its scope and content and at least two years of experience in a management or professional position in a company performing public waterway transport, transport management, marketing, logistics and technology or traffic control,
- without passing the exam, if the candidate has completed full vocational education in the field of transport operation and economy, transport technology and operation, transport academy, plant operator and transport economy or transport operation or in a related study field obtained at a vocational school in the Slovak Republic or education obtained abroad, which is equivalent in terms of its scope and content and at least three years of experience in a management or professional position in a company performing public waterway transport, transport management, marketing, logistics and technology or traffic control,
- passing a professional examination before the Examining Board.

The license is granted for an indefinite period or for fixed-term. The validity of the license granted for a fixed-term shall expire upon expiry of the period for which the license was granted. The MTC SR may withdraw the license if the holder infringe the obligations established by Act No. 338/2000 Coll. .:

Pursuant to Act No. 338/2000 Coll. only vessels are operated on waterways, which:

- comply with the rules of vessels safety by their characteristics, the requirements of the safety of vessel crew and transported persons, the rules for the transport of dangerous goods and the conditions on the waterway,
- built in accordance with the shipbuilding rules and maintained in accordance with the requirements for vessel technical competence;
- and if they are subject to the classification, they are classified.

The Subjects of obligatory classification are:

- self-propelled vessels that are not small vessels,
- non-self-propelled vessels that are not small vessels with a displacement greater than 100 m<sup>3</sup>,
- ferry, floating equipment, floating structures with reserved technical equipment that are not small vessels, vessels transporting dangerous goods and so on,
- vessels up to 20 m intended for the carriage of more than 12 passengers or intended for the towing, pushing or guiding of a side-by-side convoy.

As part of the vessel registration, it is necessary to perform the verification of the technical competence of the vessel carried out by the Transport Authority and issued on the basis of the results of the verification of the ship's certificate or other relevant document permitting the operation of the vessel. Each vessel subject to registration (ferry, floating equipment) shall bear the flag of the Slovak Republic during the navigation. If the displacement of the vessels exceeds 100 m<sup>3</sup> before entry into service, it is necessary to calibrate vessel to determine the vessel's useful weight as a function of its draught, marking of the draught scales, subdivision load line and the maximum permissible draught. Calibration is done by the relevant Transportation Authority. Each registered vessel may be operated on a waterway only with a closed liability insurance for damages caused by the operation of the vessel.

During the operation of the vessel the originals of the following shipping documents must be available:

- a vessel certificate or temporary vessel certificate,
- gauging certificate,
- list of vessel crew members,
- a navigation logbook,
- journey log-book,
- documents according to international agreement which the Slovak Republic is bound to,
- a check book of transmitted oils on self-propelled vessels, floating equipment and floating structures with built-in waste water tanks.

In addition to the vessel's papers, the following documents shall also be stored on vessel during operation:

- authorization to establish and operate a radio station if the vessel has such a station,
- a review report on a dedicated technical equipment by type of dedicated technical equipment,
- proof of liability for damage caused by the operation of the vessel,
- authorization to stall floating facility on a waterway or in a port when it is a floating facility.

A summary of theoretical knowledge, practical experience and knowledge of generally binding legislation shall be also demonstrated by the professional examination of vessel crew members:

- vessel's captain,
- ferryman,
- boatmaster of floating equipment,
- helmsman,

- helmsman of the barge,
- engine operator,
- bargeman.

The Government Central Authority of the Slovak Republic for Inland Navigation and Ports is the Ministry of Transport and Construction of the Slovak Republic in cooperation with the Transport Authority. The Ministry of Transport and Construction of the SR within the scope of its competence:

- defines the concept of the development of inland navigation, ports and waterways and in cooperation with the Ministry of the Environment of the Slovak Republic ensures its implementation in accordance with the intentions of the state transport policy,
- represents the Slovak Republic in matters of inland navigation in contact with international organizations operating in the field of inland navigation,
- provides international co-operation in the transport of dangerous goods,
- checks offer development of the vessels capacity intended for the carriage of goods in waterway transport, entered in the register of vessels,
- evaluates the intensity of waterway transport in relation to vessel capacity, waterway throughput and its state,
- monitors whether the development of vessel capacity and waterway transport intensity does not lead to a serious disturbance in the financial capability of carriers,
- impose sanctions under this Act,
- gives its consent to the establishment of ports and defines their territory,
- grants and withdraws a license,
- shall issue a certificate of professional competence of the carrier,
- approves the rate of reimbursement for the use of public ports.

The Transport Authority carries out state professional inspection of:

- management and maintenance of waterways and ports,
- operation of vessels and vessels rental on waterways and in ports,
- competence of the vessels crew members and the navigation commander at locks,
- capability of the vessels with the exception of production installation on vessels according to a special regulation,
- compliance with inland navigation rules,
- performance and process of qualification course,
- competence of security advisors and experts,
- transport of dangerous goods,
- performance a small vessel technical inspection

The Slovak Republic, as a member country of the EU, has a liberalized market in sector of inland waterway transport operation, which is a condition of a single European transport area. A carrier fulfilling the statutory conditions may carry out waterway transport in the Slovak Republic (or transit through the Slovak Republic) regardless of the place of registration of the company within the EU. Access to the market is subject to compliance with the conditions defined in the Act 338/2000 Coll., which complies with European regulations. Slovak waterways are the state property and they are subject to state administration through the Slovak Water Management Company, whose role is to provide care for the watercourses and tangible fixed activities built on them.

European Agreement on Main Inland Waterways of International Importance (AGN), which was adopted as a coordinated plan for the development and construction of an inland waterway network (waterway network of category E). The waterway network of category E consists of inland waterways and ports of international importance:

- E80 - the River Danube from Kelheim to the estuary of the Danube to the Black Sea via Sulina's branch
- E81 - the River Váh from its estuary to Žilina
- P80-38 - the port of Bratislava
- P80-40 - the port Komarno
- P80-41 - the port of Štúrovo

European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) has been adopted to enhance the safety of the international transport of dangerous goods, effective environmental protection, facilitating transport activities and promoting the development of international trade. The agreement is regularly updated and ammended as necessary.

The Budapest Convention on the Contract for the Carriage of Goods by Inland Waterway (CMNI) was elaborated and adopted in order to establish a common agreement for the establishment of uniform rules for the carriage of goods by inland waterway.

Convention on navigation on the Danube between the Republic of Czechoslovakia, the People's Republic of Bulgaria, the Republic of Hungary, the USSR, the People's Republic of Romania, the Soviet Socialist Republic of Ukraine and the Federal Republic of Yugoslavia (Convention 241/1949 Coll.), which allowed a free and open navigation on the Danube from Ulm to the Black Sea over Sulina's branch with access to the Black Sea.

Administrative Agreements on the Recognition of Certain Slovak Documents by the Rhine Commission (on the Recognition of Service Logbooks, in the area of recognition of vessel captain competence certificate and radio navigator ) which have been concluded in an effort to simplify the obligations of businessmen in maritime shipping and to facilitate the freedom of movement of their crew members.

**Table 9 International inland waterway transport at TRITIA area - international conventions**

Country	International convention
Slovakia <sup>12</sup>	AGN, AND, CMNI, Convention 241/1949 Zb., Bilateral treaties with Rhine Commission
Czech republic <sup>13</sup>	<p>Council directive 91/672/ES of 16 December 1991 on the reciprocal recognition of national boatmasters' certificates for the carriage of goods and passengers by inland waterway.</p> <p>Council Directive 96/50/EC of 23 July 1996 on the harmonization of the conditions for obtaining national boatmasters' certificates for the carriage of goods and passengers by inland waterway in the Community.</p> <p>Directive 2005/33/EC of the European parliament and of the council of 6 July 2005 amending Directive 1999/32/EC as regards the sulphur content of marine fuels.</p> <p>Directive 2005/44/EC of the European parliament and of the council of 7 September 2005 on harmonised river information services (RIS) on inland waterways in the Community.</p> <p>Directive 2006/87/EC of the European parliament and of the council of 12 December 2006 laying down technical requirements for inland waterway vessels and repealing Council Directive 82/714/EEC.</p> <p>Council Directive 87/540/EEC of 9 November 1987 on access to the occupation of carrier of goods by waterway in national and international transport and on the mutual recognition of diplomas, certificates and other evidence of formal qualifications for this occupation.</p> <p>Directive 2008/68/EC of the European parliament and of the council of 24 September 2008 on the inland transport of dangerous goods.</p>

<sup>12</sup> www.mindop.sk

<sup>13</sup> Act. No. 114/1995 Coll. about inland navigation

Country	International convention
	<p>Commission directive 2010/61/EU of 2 September 2010 adapting for the first time the Annexes to Directive 2008/68/EC of the European Parliament and of the Council on the inland transport of dangerous goods to scientific and technical progress.</p> <p>Council directive 2014/112/EU of 19 December 2014 implementing the European Agreement concerning certain aspects of the organisation of working time in inland waterway transport, concluded by the European Barge Union (EBU), the European Skippers Organisation (ESO) and the European Transport Workers' Federation (ETF).</p> <p>2) Council regulation (EEC) No 2919/85 of 17 October 1985 laying down the conditions for access to the arrangements under the Revised Convention for the navigation of the Rhine relating to vessels belonging to the Rhine Navigation.</p> <p>Council regulation (EEC) No 3921/91 of 16 December 1991 laying down the conditions under which non-resident carriers may transport goods or passengers by inland waterway within a Member State.</p> <p>Regulation (EU) NO. 1177/2010 of the European parliament and of the council of 24 November 2010 concerning the rights of passengers when travelling by sea and inland waterway and amending Regulation (EC) No 2006/2004</p>
Poland <sup>14</sup>	<p>Ratification of the AGN Convention 21.01.2018; The AGN Convention obliges Poland to adapt our main waterways to at least IV class navigability. Lower classes do not qualify for the use of TEN-T funds (trans-European EU transport corridors). To use the EU TEN-T funds, our main waterways must have the parameters of IV class navigability (transit depth on the route of at least 2.5 m).</p> <p>Directive 2009/100 / EC of the European Parliament and of the Council of 16 September 2009 on the reciprocal recognition of navigability licenses for inland waterway vessels (Text with EEA relevance)</p> <p>Directive 2005/44 / EC of the European Parliament and of the Council of 7 September 2005 on harmonized river information services (RIS) on inland waterways in the Community</p> <p>Directive of the European Parliament and of the Council (EU) 2017/2397 of 12 December 2017 on the recognition of professional qualifications in inland navigation and repealing Council Directives 91/672 / EEC and 96/50 / EC (Text with EEA relevance)</p> <p>Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on EU guidelines for the development of the trans-European transport network and repealing Decision No 661/2010 / EU Text with EEA relevance</p> <p>OJ L 348 of 20/12/2013</p> <p>Poland signed the CMNI Budapest Convention (the agreement came into force in 2005) but did not ratify it.</p> <p>European Agreement concerning the International Carriage of Inland Waterways of Dangerous Goods (ADN).</p>

**Table 10 Summarization of the inland waterway freight transport conditions at TRITIA area**

Country	Slovakia	Czech republic	Poland
Inland waterway infrastructure operation	state ownership and administration	state ownership and administration	state ownership and administration
Infrastructure charges	inland waterway without charges, services in the Slovak ports are charged according to the price list	inland waterway without charges, services in the Czech ports are charged according to the price list	Fees related to the use of water infrastructure are regulated by the Announcement of the Minister of Maritime Economy and Inland

<sup>14</sup> <https://eur-lex.europa.eu>

Country	Slovakia	Czech republic	Poland
			Navigation from October 12, 2018 regarding the amount of charges for the use of inland waterways and their sections, and locks and slipways in force from January 1, 2019. (1)
Access of the carriers to the infrastructure	liberalized marked, conditions defined in the legacy framework	liberalized marked, conditions defined in the legacy framework.	liberalized marked, conditions defined in the legacy framework.
Inland waterway carriers	private companies	private companies	private companies

(1) Guidelines in accordance with the Notice of the Minister of Maritime Economy and Inland Navigation from October 12, 2018 regarding the amount of charges for the use of inland waterways and their sections as well as sluices and slipways in force from January 1, 2019 are included in the Table 11.

**Table 11 Rates related to the use of inland water infrastructure**

The amount of the maximum rate of duty applicable for:	navigation of empty cargo ships	it can not be higher than 0,0012 EUR* for one tonne-kilometer of deadweight
	navigation of passenger and cruise ships	may not be higher than 0,0060 EUR* for the product of one place on the ship and every kilometer of the waterway traveled
	transport of goods by cargo ships and towing and floating of timber	it can not be higher than 0,0048 EUR* for one tonne-kilometer
	the use of sluices or slipways can not be higher than:	for one passage through airlock or slipway from 7.00 to 4,44 - 8,34 EUR*
for one passage through the airlock or slipway from 7:00 pm to 7:00 am - 16,68 EUR*		
Unit rate of receivables for using sluices or slipways for one passage through airlock or slipway:	navigation of empty cargo ships	is 0,00003 EUR* for one tonne-kilometer of deadweight
	navigation of passenger and cruise ships	is 0,0042 EUR* per one ship's product and each kilometer of waterway traveled
	transport of goods by cargo ships, as well as towing and floating of wood to:	the Odra River from km 94.9 to km 282.5; The Gliwice Channel from km 0.0 to km 39.4 and the Kędzierzyński Channel from km 0.0 to km 5.6 - is 0,00003 EUR* for 1 tonne-kilometer
		on the Vistula-Odra waterway from the estuary of the Brda River to the city of Krzyż, that is to km 176.2 of the Noteć River and the Gdańsk node, that is on the rivers Nogat, Szarpawa and Wisła Martwa - 0,0016 EUR* for 1 tonne-kilometer
		other (mentioned in § 2 of the MG MiZS Regulation of 22/03/2018 on the amounts due for the use of inland waterways and their sections as well as sluices and slipways) - 0,0016 EUR* per 1 tonne kilometer
use of sluices or slipways for one passage through airlock or slipway:	a ship, a pushed train or a towed set, a barge, a raft, a tugboat and a pusher (not included), a passenger or cruise ship, a floating device intended or used for technical works, maintenance of shipping lanes or exploitation of aggregate deposits and a floating object of a length above 20 m for each of the following vessels: <ul style="list-style-type: none"> <li>from 7.00 to 19.00 it is EUR 3,69*,</li> <li>from 1900 to 700 it is EUR 3,88*,</li> </ul>	
	a vessel intended for sports or recreation and other small vessels (vessels up to 15 tonnes or carrying no more than 12 passengers), for each ship:	

		<ul style="list-style-type: none"> <li>• from 7.00 to 19.00 is EUR 1,71*,</li> <li>• from 19.00 to 7.00 EUR 3,43*</li> </ul>
		a kayak or rowing boat for each kayak or rowing boat: <ul style="list-style-type: none"> <li>• from 7.00 to 19.00 is EUR 0,98*,</li> <li>• from 19.00 to 7.00 EUR 1,96*.</li> </ul>

\*Notice: 1 EUR = 4,28 PLN

### 3. Inland waterway infrastructure in TRITIA area

EU countries use the well-established classification of inland waterways originating from European Conference of Ministers of Transport (CEMT) adopted in 1992 under the title "Resolution of the European Conference of Ministers of Transport (CEMT) No. 92/2 on a new classification of inland waterways". The classification has established the division of European waterways into the main classes marked with roman numeral I to VII, it defines the minimum and target parameters of the devices to overcome the height differences (lock chambers, lifts) on the waterway, the minimum structure gauge of the bridges and the recommended draught for a given class of safety and traffic fluency. In terms of importance, waterways of regional importance are classified in classes I - III and waterways of international importance are classified in classes IV to VII. The classification of waterways has also been taken into account in the classification of European inland waterways of international importance under the AGN Agreement.

**Table 12 Classification of the European international inland waterways<sup>15</sup>**

Type of waterways	Class of waterways	Motor cargo vessels a boats					Pushed convoys					Min. clear height 2/ H (m)
		Type of ship: general characteristics					Type of convoy: general characteristics					
		Name	Max. length L (m)	Max. width B (m)	Draught 6/ d (m)	Tonnage T (t)		Length L (m)	Width B (m)	Draught 6/ d (m)	Tonnage T (t)	
1	2	3	4	5	6	7	8	9	10	11	12	13
International importance	IV	Johan Welker	80-85	9.5	2.5	1000-1500		85	9.5	2.5-2.8	1250-1450	5.25 alebo 7.00
	V a	big Rhine vessels	95-110	11.4	2.5-2.8	1500-3000		95-110	11.4	2.5-4.5	1600-3000	5.25 alebo 7.00 alebo 9.1
	V b							172-185	11.4	2.5-4.5	3200-6000	
	VI a							95-110	22.5	2.5-4.5	3200-6000	7.00 alebo 9.00
	VI b		140	15	3.9			185-195	22.8	2.5-4.5	6400-12000	7.00 alebo 9.00
	VI c							270-280 195-200	22.8 33.0-34.2	2.5-4.5	9600-18000	9.1
	VII							275-285	33.0-34.2	2.5-4.5	14500-27000	9.1

<sup>15</sup> ADN, Annex 3

### 3.1. Czech republic

The use of the waterway to Ostrava for freight transport in Class I is possible but is practically unfeasible. It can be said that there is currently no useful waterway in Moravian-Silesian region for freight transport. This is a problem for competitiveness for significant part of the local industry.

**Table 13 Categorization of inland waterway - Czech republic<sup>16</sup>**

Inland waterway	Class	Total length (km)
Batův kanál	0	53 km
Střední Vltava	I	122 km
Labsko - vltavská waterway	IV	206 km
Labsko - vltavská waterway	Va	109 km

Labsko - vltavská waterway is only infrastructure for water freight transport in Czech republic. Intensity of transport is very low. Transport can't be considered as regular.

**Table 14 Parameters of Czech waterways in details<sup>17</sup>**

Waterway	Class	Maximal dimensions	Maximal dimensions of set		Boat dive		Gantry profile height
			Usually	Maximal	Min.	Max	
Bat'a canal	0		38 x 5 m		0,8 m	1,2 m	2,1 m (3,3 m)
Middle Vltava	I		44x 5 m		1,3 m	2,2 m	
Middle Elbe	IV	84 x 11,5 m	84 x 11,5 m		2,1 m		4,7 m (5,25 m)
Lower Vltava	IV	110 x 10,6 m	110 x 10,6 m	137 x 10,6 m	1,8 m		4,5 m
Lower Elbe	Va	110 x 11,5 m	110 x 11,5 m	137 x 23 m 170 x 11,5 m	2 m	2,2 m	6,5 m
Regulated Elbe	Va	110 x 11,5 m	110 x 11,5 m	137 x 23 m 170 x 11,5 m	<1 m	2,8 m	6,5 m

Problem of usability sections in table above is missing Děčín cruise stage, which does not allow yearround traffic to and from Germany and sea ports. Described sections are too short for economical usability.

**Table 15 International categorization of inland waterway - Czech republic**

Inland waterway	Class	Total length (km)
Elbe-Vltava waterway	IV (Vltava and upper Labe behind Mělník)	206 km
Elbe-Vltava waterway	Va (Mělník - border CZ/Germany)	109 km

Other waterways are class I or dams for tourist boats.

<sup>16</sup> Transport statistical yearbook of the Czech republic 2017

<sup>17</sup> [https://cs.wikipedia.org/wiki/Parametry\\_vodn%C3%ADch\\_cest\\_v\\_%C4%8Cesku](https://cs.wikipedia.org/wiki/Parametry_vodn%C3%ADch_cest_v_%C4%8Cesku)



**Figure 1** Inland waterway infrastructure in the Czech Republic without dam waterways

Following to map above is evidently, that freight watertransport is not real thing without connection to Poland by Odra waterway. Connection to Odra seaports is key problem for start of use Odra waterway in Moravian-Silesian region. Other potential connections are many more expensive.

**Table 16** Selection of important inland waterways for TRITIA traffic model - Czech republic

Inland waterway	Class	Total length (km)
Oder, section Ostrava - border crossing CZ/PL	No in use in Czech republic at present, waterway is in study phase, class will be Va.	13 km
Mělník - border CZ/Germany	Va	109 km

Section Mělník - border CZ/Germany must to be considered as not reliable for whole year international water transport according to navigation possibilities in Děčín cruise stage.

**Table 17** List of planned project on the inland waterway infrastructure - Czech republic

Serial no.	Project name	Location	Project type	Planned schedule of the project (construction)
1.	Water corridor Dunaj-Odra-Labe	Czech republic	Study	Study in verification process, no confirmed schedule for next project steps and construction

Notice: Optimistic prediction is up to 2030 for part Poland-Ostrava. The route of the proposed water corridor begins to the Czech territory near the Bohumín-Chalupki road bridge (former border crossing CZ/PL, km 98,300) and in the area of Šilheřovice, Bohumín and Ostrava runs along the existing route of the Odra River to proposal of location of the Ostrava port (km 85,300)

There is no information about waiting time at border with Germany on Labe waterway. No other border exists on Czech waterways.

Odra waterway is class I in Czech and Poland too in Europe waterway map, there are no differences at CZ/PL border. This waterway is not in state statistics.

### 3.2. Poland

The ordinance of the Council of Ministers of 7 May 2002 on the classification of inland waterways lists the indicators on the basis of which the classification of inland waterways takes place. These are:

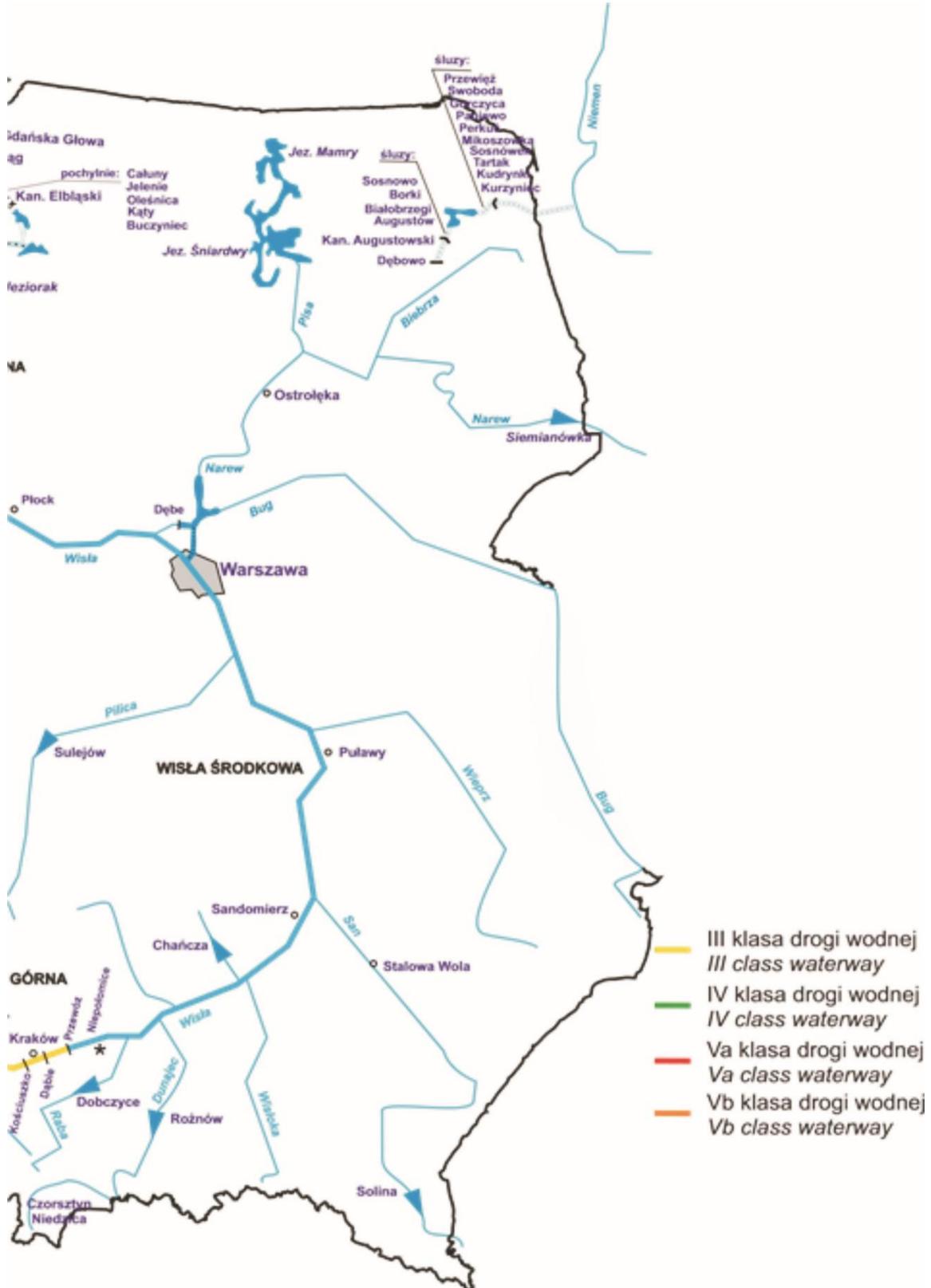
- the size of the minimum clearance under bridges, pipelines and other devices crossing the waterway;
- maximum parameters of ships or pushed convoys that may be allowed to be navigated on a specified waterway.

**Table 18 Polish classification of inland waterways**

Types of inland waterways	Class of navigable waterways	Motor vessels and barges				Pushed convoys				Pushed convoys
		Max. length (m)	Max. beam (m)	Max. draught (m)	Tonnage (t)	Max. length (m)	Max. beam (m)	Max. draught (m)	Tonnage (t)	
Of regional importance	Ia	24	3,5	1,0						3,0
	Ib	41	4,7	1,4	180					3,0
	II	57	7,5-9,0	1,6	500					3,0
	III	64-70	8,2-9,0	4,6-2,0	700	118-132	8,2-9,0	1,6-2,0	1000-1200	4,0
Of international importance	IV	80-85	9,5	2,5	1000-1500	85	9,5	2,5-2,8	1250-1450	5,25 or 7,0
	Va	95-110	11,4	2,5-2,8	1500-3000	95-110	11,4	2,5-3,0	1600-3000	5,25 or 7,0
	Vb					172-185	11,4	2,5-3,0	3200-4000	



Figure 2 Waterways in Poland, part 1



**Figure 3 Waterways in Poland, part 2**

The above drawings show the course of waterways in Poland. Inland waterways in Poland include the following sections:

- Biebrza from the estuary of the Augustów Canal to the estuary of the Narew River;

- Brda from the connection with the Bydgoski Canal to the estuary to the Vistula River;
- Bug from the estuary of the Muchawiec River to the estuary of the Narew River;
- Lake Dąbie to the border with internal sea waters;
- The Augustowski Canal from the connection with the Biebrza River to the state border, along with the lakes along the route of this channel;
- Bartnicki Canal from Lake Ruda Woda to Lake Bartężek, along with Lake Bartężek;
- Bydgoski Canal;
- The Elbląg Canal from Druzno Lake to Lake Jeziorak and Lake Szelał Wielki
- Gliwicki Canal together with the Kędzierzyński Canal;
- Jagielloński Canal from the connection with the Elbląg River to the Nogat River;
- Łączański Channel;
- Ślesiński Canal with lakes on its route and Lake Gopło;
- The Żerański Canal;
- Martwa Wisła from the Vistula river in the village of Przegalina to the border with internal sea waters;
- Narew from the estuary of the Biebrza river to the estuary of the Vistula river, along with Zegrzeński Lake;
- Nogat from the Vistula River to the estuary to the Vistula Lagoon;
- Noteć (upper) from Lake Gopło to the connection with the Górnonotecki Channel and the Górnonotecki Canal and the Noteć River (lower) from the link with the Bydgoski Canal to the estuary to the Warta River;
- Nysa Łużycka from the town of Gubin to the estuary to the Odra River;
- Odrzańska Droga Wodna;
- Western Odra from the weir in Widuchowa to the border with internal sea waters;
- Parnica and Przekop Parnicki from the Odra West River to the border with internal sea waters;
- Pisa from the Roś lake to the estuary to the Narew River;
- Szkarpa from the River Wisty to the estuary to the Vistula Lagoon;
- Warta from the Ślesińskie Canal to the estuary to the Odra River;
- System of Great Masurian Lakes;
- Vistula from the estuary of the River Przemsza to the connection with the Łączański Canal and from the estuary of this Channel in Skawina to the estuary of the Vistula to the Gulf of Gdansk.

In Poland the waterways with parameters of international classes are:

- Wisła from the estuary of the River Przemsza to the link with the Łączyński Channel - 37.5 km (Class IV),
- Wisła from Płock to the Włocławek barrage - 55 km (class Va),
- Martwa Wisła - 11.5 km (class Vb),

- Lake Dąbie to the border with internal sea waters - 9.5 km (class Vb),
- Odra from the town of Ognica to Przekopu Klucz-Ustowo and further as Regalica to the estuary to the Dąbie lake - 44.6 km (class Vb),
- Western Odra - 36.3 km (class Vb),
- River Parnica and Przekop Parnicki from the Western Oder to the border with internal sea waters - 6.9 km (class Vb).

In turn at the end of 2016, three waterways running through Poland were included in the European AGN Convention, which covers the area from the Atlantic to the Ural, connecting 28 European countries. Three of the shipping routes included in the list of standards and parameters of the waterway network of international significance contained in the "Blue Book" published on the basis of the AGN Agreement are running through Poland:

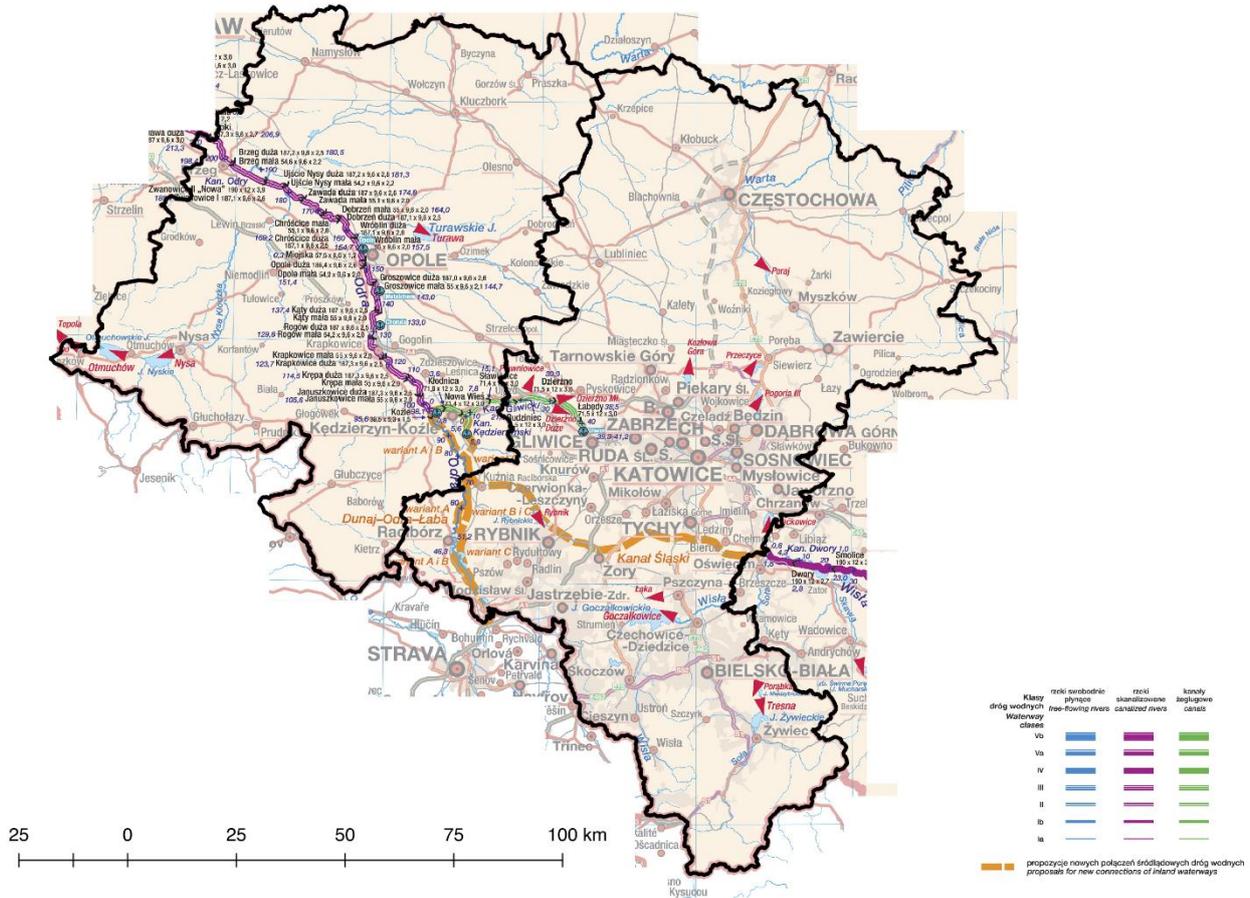
- E30 - connecting the Baltic Sea with the Danube in Bratislava, in Poland, covering Odra from Świnoujście to the border with the Czech Republic;
- E40 - connecting the Baltic Sea in Gdańsk with the Dnieper in the area of Chernobyl and further with the Black Sea, in Poland embracing the Vistula from Gdańsk to Warsaw, Narew and Bug to Brest;
- E70 - connecting the Netherlands with Russia and Lithuania, covering the Oder from the estuary of the Odra-Havel Canal to the estuary of the Warta River in Kostrzyn, the Vistula-Oder waterway, and Bydgoszcz from the lower Vistula and Szkarpawa or Vistula Gdańska.

Additionally, AGN indicates 10 locations of Polish inland ports of international importance: Świnoujście, Szczecin, Kostrzyn, Wrocław, Koźle, Gliwice, Gdańsk, Bydgoszcz, Warsaw, and Elbląg.

**Table 19 The volume of inland waterways exploited in Poland in 2016**

Specification	The navigable regulated rivers	Canalised sections of rivers	Canals	Navigable lakes
	in km			
In total	2152	620	334	259
Inland waterways of regional importance				
Ia	641	101	168	54
Ib	608	137	-	-
II	691	106	106	168
III	115	207	57	28
Inland waterways of international importance				
IV	-	14	-	-
Va	-	55	-	-
Vb	97	-	14	10

In 2016, the length of regulated navigable rivers was 2,152 km, 620 were canalised sections of rivers, 334 km of canals and 259 km of navigable lakes. A slight improvement can already be seen in 2017, where the length of the inland waterways network in Poland amounted to 3654 km, of which 2417 km were regulated navigable rivers, 644 km - sewer river sections, 335 km - canals, and 259 km - navigable lakes. 3363 km (92.1%) of navigable roads were exploited by navigation.



**Figure 4 Waterways in Poland of the Tria area divided into classes**

The Polish Tria area currently includes the following sections of inland waterways:

- The Gliwice Channel with a length of 40.6 km runs from the Odra River in Kędzierzyn-Koźle to the Port of Gliwice. The difference in the level of extreme positions with the value of 43.6 m is covered by 6 twin lock sluices. The footprint of the Gliwicki Canal, open to shipping although currently unused, is the Kędzierzyński Canal, which links the Gliwice Canal with nitrogen plants in Kędzierzyn-Koźle.
- Odra canalised on the section from Raciborz to Koźle is a class Ia waterway, however, at the present time, there is no sailing on this section. Further, from Koźle (km 98.2) to the barrage in Brzeg Dolny (km 281.6), it is classified as class III waterways. Almost all its length it meets the required operating parameters (except for the 4-kilometer section between Oława and Ratowice). On this section there are 48 locks (counting without the initial Koźle lock and the Malczyce barrage being under construction).

In this area, it is also planned to build two main sections of waterways, including the Silesian Canal and a channel that will be a connection of the Danube, Oder and Elbe. These investments can become an artery connecting Silesia with European waterways.

**Table 20 Selection of important inland waterways for TRITIA traffic model - Poland**

Inland waterway	Class	Total length (km)
The Gliwicki canal	III	41,2
The Kędzierzyński canal	II	5,9
The Oder river:		

Inland waterway	Class	Total length (km)
From the town of Racibórz to the lock in the town of Kędzierzyn-Koźle	Ia	44,4
from the lock in the town of Kędzierzyn-Koźle to the lock in the town of Brzeg Dolny	III	187,1

**Table 21 List of planned project on the inland waterway infrastructure - Poland**

Serial no.	Project name	Location	Project type	Planned schedule of the project (construction)
1.	"Support for the inland waterway development policy in the light of the new Water Law"	Oder Waterway	The project is financed from the European Commission's Structural Reform Support Programm.	2018-2021
2.	"The research and technical concept for the modernization of the sewer section of the Oder Waterway to the navigability class Va"	Oder Waterway	Technical elaboration prepared by the Szczecin and Świnoujście Seaports Authority.	2018-2019
3.	"Research guidelines for the design of water degrees on the Odra flowing freely, planned in order to obtain a navigable waterway of Va"	Oder Waterway	Technical elaboration prepared by the Szczecin and Świnoujście Seaports Authority.	2018-2019
4.	Opole - Kędzierzyn Kozle <sup>18</sup>	Poland	Modernisation Va	2020-2025
5.	Kędzierzyn-Kozle - Waterway Node (ODW-DOL) <sup>18</sup>	Poland	Construction Va (km 117,000 - km 159,800) 42,8 km	2025-2030
6.	Waterway Node - Lock Bukow (incl. reservoir Raciborz Dolny) <sup>18</sup>	Poland	Construction Va (km 103,000 - km 117,000) 14 km	2025-2030
7.	Lock Bukow - cross border PL/CZ <sup>18</sup>	Poland	Construction Va (km 103,000 - km 98,300) 4,7 km	2025-2030
8.	Kędzierzyn Kozle - Gliwice <sup>18</sup>	Poland	Modernization, Va	2020-2030

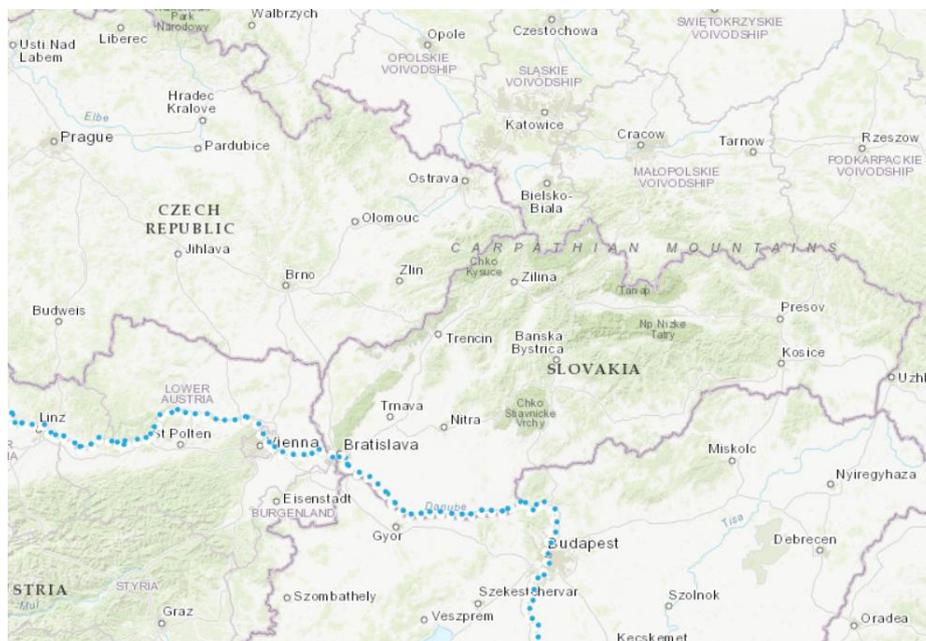
The Odra Waterway Development Program implements the obligations of the minister competent for inland waterway issues to develop a plan or program for the development of inland waterways of special transport importance, guided by the need to ensure conditions for sustainable development of the country's transport system - in relation to the Odra river waterway with newly designed sections: the Silesian Channel and the Odra-Dunaj-Łaba (DOL) connection - the Polish section of Kędzierzyn-Koźle - Chałupki / Bohumin (CZ). In the fourth quarter this year a final work schedule will be prepared, which will be preceded by public consultations in accordance with the Act of 3 October 2008 on access to information on the environment and its protection, public participation in environmental protection and environmental impact assessments. During this period, the documentation of the Odra Waterway Development Program will begin, which at the end of the current quarter will be supported by the results of the transport analysis commissioned by the Ministry of Maritime Economy and Inland Navigation. At the same time, economic analyzes and technical analyzes will be carried out, the completion of which is planned for the first quarter of 2020. In the first half of 2019, after the outline of the Odra Waterway Development program has been drawn up, the scope and level of detail of information required in the environmental impact forecast for the Odra Waterway

<sup>18</sup> Source: Ministry of Transport of the Czech Republic, Feasibility study of the Water Corridor D-O-E, 2018

Development Program will be agreed with the General Director of Environmental Protection and the Main Sanitary Inspector. In the next period, until the second quarter of 2020, an environmental impact forecast will be prepared. In the period of the second quarter of 2020 - Q4 2020, the process of social consultations of the Program's project will be carried out along with the environmental impact forecast. This task will include the period for preparing consultations, statutory deadlines for submitting comments to documents, their consideration and including in the final version of documents. Completion of works and preparation of the final version of the Odra Waterway Development Program together with the environmental impact forecast is planned for the first quarter of 2021.

### 3.3. Slovakia

The Danube River is the most important inland waterway in the Slovak Republic, insuring connections to Slovakia with other Danube countries such as Germany, Austria, Hungary, Croatia, Serbia, Romania, Bulgaria, Moldova and Ukraine (the Danube flows through 10 European countries). After the opening of the Main- Danube connecting canal in 1992, which connects the Danube River with the Main River (the right tributary of the Rhine), the Rhine - Main- Danube waterway was created. This waterway is more than 3,500 kilometers long, it flows through 15 European countries and connects the North Sea with the Black Sea. It allows exchange of goods between seaports lying on the North and Black Sea coasts (Dutch ports of Rotterdam, Amsterdam, Romanian port of Constanta) with inland. The Danube is the part of the core TEN-T network defined by the Rhine-Mohan-Danube corridor, as well as the E80 transects in the sense of AGN.

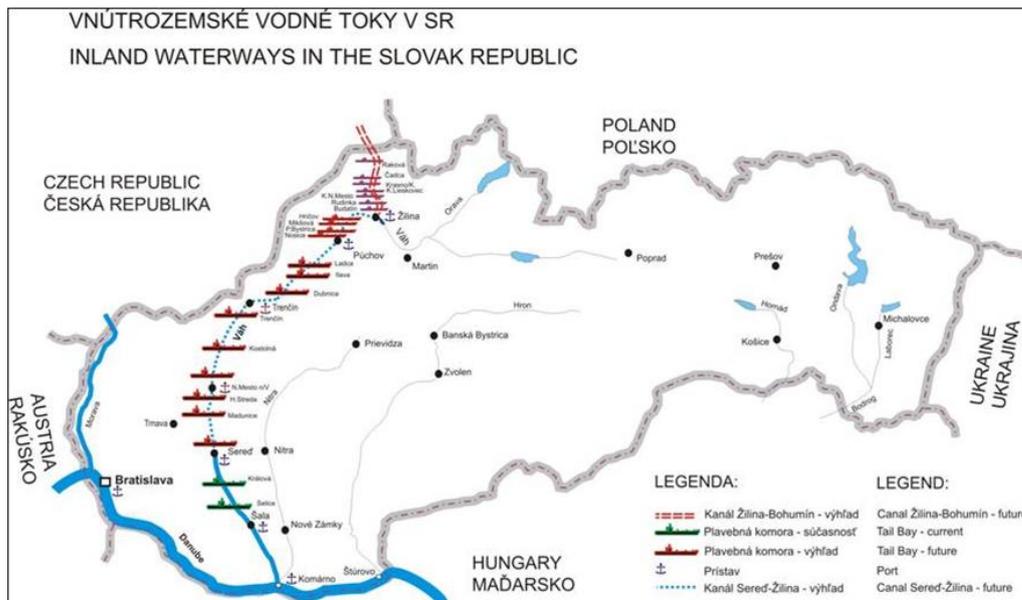


**Figure 5 TEN-T Corridor Rhine - Danube<sup>19</sup>**

The second most important waterway in Slovakia is the river Váh. It is one of the longest Slovak rivers and is planned to be used for water transport in the future. Navigability of the Váh is planned from the estuary into the Danube near Komarno to Žilina in the length of about 250 km, but currently there is not set the exact time horizon of the implementation of individual sections of Váh navigability. The section from Žilina to SK/CZ border crossing is not planned any more as is presented in the Figure 6:

<sup>19</sup> <http://ec.europa.eu/transport/infrastructure/tentec/tentec-portal/map/maps.html>

1. section Komárno - Sered' (75 km, opened in June 1998) - class VIa (with a limited draught 2 m, this section was used to transport artificial fertilizer from Duslo Šala on the Upper Danube between 1998 and 2004.),
2. section Sered' - Púchov (124 km, planned) - class Va,
3. section Púchov - Žilina (51 km, planned) - class Va.



**Figure 6 Inland waterway infrastructure in the Slovak Republic<sup>20</sup>**

**Table 22 Categorization of inland waterway - Slovakia<sup>21</sup>**

Inland waterway	Class	Total length (km)
Danube river (1880,20 - 1867,00)	VIb	13,20
Danube river (1867,00 - 1708,20)	VII	158,80
Váh river (0,00 - 70,00)	VIa	70,00

Current projects for the development of waterways in Slovakia are aimed at modernization and reconstruction of the Danube waterway infrastructure and modernization and development of public port infrastructure in Bratislava.

In TRITIA territory (Žilina self-governing region) there is the Váh waterway, which is still in the planning phase without a specified time horizon of implementation. For this reason, the Váh waterway will not be considered within the TRANS TRITIA project in the time horizon until 2030. There is no suitable infrastructure for water transport in Slovakia for the TRITIA transport model.

The inland waterway from Slovakia to Poland or to Czech Republic does not exist, which implies that there can be no technical or administrative restrictions between these countries

<sup>20</sup> [www.mindop.sk](http://www.mindop.sk), section from Žilina to SK/CZ border crossing according to the strategic documents is not planned for construction

<sup>21</sup> Decree of Ministry of transport, development and telecommunication of the SR no. 22/2001

## 4. Inland waterway transport parameters

There are no relevant waterways in the territory of Žilina region which should be considered within the traffic model.

**Table 23 Parameters of selected inland waterways in Moravian-Silesian region**

ID	Section name	Length (km)	Speed (km/h)	Class
CZ01	Odra present	13	N/A	I
CZ02	Odra (future state)	58	N/A	Va

Notice: 13 km Czech part of Odra waterway is not used at present. 58 km In future is next part from Ostrava to south due to D-O-L study

Freight water transport is not currently operating in the Moravian-Silesian Region, although in the 1970s it was tried and at the moment it would help the competitiveness of industrial enterprises in the region. The railway line in Odra River direction has long been assessed by rail freight carriers as a bottleneck and will have to grow in the future for the coal transportation to the manufactures and power stations, which are only happening within the region from its own mines outside the main busiest railroad tracks. At least for the two reasons mentioned above, the potential for the introduction of freight water transport in the region is strong.

**Table 24 Parameters of selected inland waterways in Opole and Silesian voivodship**

ID	Section name	Length (km)	Speed (km/h)	Class
PL01	The Gliwicki canal	41,2	N/A	III
PL02	The Kędzierzyński canal	5,9	N/A	II
PL03	The Oder river:			
	a) From the town of Racibórz to the lock in the town of Kędzierzyn-Koźle	44,4	N/A	Ia
	b) from the lock in the town of Kędzierzyn-Koźle to the lock in the town of Brzeg Dolny	187,1	N/A	III

At present, the parameters of the sections of the Oder Waterway (ODW) indicated in the table are characterized by a low level. The network of waterways is heterogeneous, created by a set of separate and differing classes of sections. Among the identified navigability classes there are: class Ia (44.4 km), class II (5.9 km) and class III (228.3 km). This indicates the existence of waterways only of regional importance, while there are no roads with parameters that meet the requirements of inland waterways of international importance.

The low condition of roads results in assumptions for the development of waterways, which are aimed at achieving an international navigability class and including the ODW in the European waterway network.

**Table 25 The list of transported commodities in inland waterway transport - Czech republic (2017)<sup>22</sup>**

Commodity	Thous. tonne
Mining products	359 (21 mill. tonne-km)
Wastes	59 (1 mill. tonne-km)

**Table 26 The list of transported commodities in inland waterway transport - Poland (2017)**

Commodity	National	International
	In thousand tonnes	
TOTAL	2536,096	3241,451

<sup>22</sup> Transport yearbook of the Czech Republic 2017 - Vessels registered in Czech republic only

Commodity	National	International
	In thousand tonnes	
Products of agriculture, hunting, forestry; fish and other fishing products	5,075	354,974
Coal and lignite; crude petroleum and natural gas	556,205	467,752
Metal ores and other mining products and quarrying products; peat, uranium, and thorium	1568,756	840,580
Food products, beverages and tobacco	2,344	155,408
Wood and products of wood and cork (except furniture), articles of straw and plaiting materials; pulp, paper and paper products; printed matter and recorded media products, printed matter and recorded media	-	175,577
Coke and refined petroleum products	314,438	23,742
Chemicals, chemical products, and man-made fibres; rubber and plastic products; nuclear fuel	30,613	135,449
Other non metallic mineral products	0,100	360,654
Basic metals, fabricated metal products, except machinery and equipment	10,604	318,950
Machinery and equipment n.e.c.; office machinery and computers; electrical machinery and apparatus n.e.c.; radio, television and communication equipment and apparatus; medical, precision and optical instruments; watches and clocks	1,087	5,665
Transport equipment	2,894	2,696
Secondary raw materials; municipal wastes and other wastes	43,890	400,004
Equipment and materials utilised in the transport of goods	0,090	-

The structure of cargo transported by inland waterway is different for domestic and international transport. In domestic transport, inland waterway transport is mainly transported:

- Metal ores and other mining products and quarrying products; peat, uranium, and thorium - they constitute as much as 61.86% of all transported cargo by inland navigation in Poland;
- Coal and lignite; crude petroleum and natural gas - they are in second place in terms of transported freight in domestic transport, with a 21.93% share;
- Coke and refined petroleum products - their share constitutes 12.40% of all cargo transported by inland waterway in Poland;

In international transport, transports taking into account the product structure are far more dispersed than in domestic transport. Two product groups have the largest share, namely:

- Metal ores and other mining products and quarrying products; peat, uranium, and thorium - constitute 25.93% of all transported loads in international transport by inland waterway;
- Coal and lignite; crude petroleum and natural gas - represent 14.43% of all transported cargo in international transport by inland waterway.

From the point of view of transported commodities in the Slovak Republic there is not available statistical data about transported commodities, but the water freight transport is used mainly for the transport of petroleum products, ores, concentrates, metallurgical coke, construction materials and agricultural products.

**Table 27 Structure of transported goods by inland waterway transport (2017)**

Country	Export (thous. tonne)	Import (thous. tonne)	Transit (thous. tonne)	National transport (thous. tonne)
Slovakia <sup>23</sup>	1551	21	193	15

<sup>23</sup> www.mindop.sk

Country	Export (thous. tonne)	Import (thous. tonne)	Transit (thous. tonne)	National transport (thous. tonne)
Czech republic <sup>22</sup>	63	29	0	418
Poland	729,9	142,4	0	2 536,1
...				

On the total transport of goods by inland water transport in the SR export has the most significant share (about 87%) and transit traffic has approximately 11% of share.

Czech notices -waterway transport in registered vessels in Czech Republic only, missing data for transport in Czech Republic by vessels registered in other countries

**Table 28 Structure of vessels in Czech Republic (2017)<sup>22</sup>**

Types of vessels	Passenger/freight transport	Number
Self propelled vessels	freight	33 (Total registered 34 290 tonnes)
Duumb and pushed vessels	freight	108 (Total registered 53 270 tonnes)
Tugs and pushers	freight	71 (Total power 20 870 kW)
Passenger vessels	passenge	88(Total capacity 11 842 passengers)

At the area of Moraviansilesian region and also on the Oder river there are not any freight vessels. The last navigations efforts was realised during 70s of last century.

**Table 29 Structure of vessels in Poland - part 1 (2017)**

Construction year	Tugs		Pushers		Passenger ships		
	Units	Power in kW	Units	Power in kW	Units	Power in kW	Passenger seats
TOTAL	25,0	3975	194	53 499	117	14 057	10 322
up to 1949	2,0	255	-	-	13	1 839	1 148
1950 - 1969	11,0	2 244	35	7 561	52	6 310	5 282
1970-1979	7,0	780	106	30 538	9	855	626
1980 - 1989	5,0	696	48	13 520	6	706	281
1990 - 1999	-	-	5	1 880	11	902	848
2000 - 2009	-	-			18	1 705	1 176
2010 and later	-	-			8	1 740	958

In Poland in 2017, the number of pushers and tugs constituting the towage fleet of inland waterway transport amounted to 219 pieces, which was 5 items more than in the previous year. Pusher craft

dominate in this group, accounting for 88.6% of inland waterways. Passenger fleet in 2017 amounted to 117 items, it was 7 more than in the previous year.

Most of the inland waterway transport is decapitalised and needs to be reconstructed. Its age significantly exceeds the standard period of use, and further exploitation is possible only through constant modernization. According to data for 2017:

- the vast majority of used tugboats (80%) were produced in the years 1949-1979 (up to 1989 it is as much as 100% of the rolling stock);
- the majority of used pushers (72.68%) were produced in the years 1949-1979 (up to 1989 it is as much as 97.42%);
- the majority of Holland's fleet (tugboats and pushers) was produced in the years 1949-1979 (73.52%), (up to 1989 it is as much as 97.72%);
- the majority of used passenger ships (63.25%) were calved in the years 1949-1979 (until 1989 it was 68.38%).

**Table 30 Structure of vessels in Poland - part 2 (2017)**

	Barges				
	Self-propelled			For pushing	
	Units	Power in kW	Measured tonnes	Units	Measured tonnes
TOTAL	89	30 789	65 550	509	234 294
Load capacity					
Up to 249 tonne	-	-	-	84	11 506
250 - 399	-	-	-	86	30 743
400 - 449	1	242	413	66	28 916
450 - 649	45	10 910	22 592	213	102 957
650 - 999	21	7 864	17 459	39	31 245
1000 - 1499	21	10 963	22 897	16	18 616
1500 - 1649	-	-	-	1	1 510
1650 - 2999	1	810	2 189	4	8 801
3000 and more	-	-	-	-	-
Construction year					
up to 1949	15	6 131	13 685	1	100
1950 - 1969	66	21 834	45 144	42	18 790
1970-1979	8	2 824	6 721	201	97 017
1980 - 1989	-	-	-	234	102 650
1990 - 1999	-	-	-	29	15 243
2000 - 2009	-	-	-	2	494
2010 and later	-	-	-	-	-

In Poland in 2017, the number of self-propelled barges amounted to 89, compared to 2016 it decreased by 2 units. The number of wet barges (push barges) in 2017 was 509 units, compared to 2016 it decreased by 7 units.

In terms of tonnage, barge stock with a capacity of 450-649 tonnes prevails - in the case of self-propelled barges it is 50%, while in the case of barges without own propulsion it is 41.85% of barges of a given group.

The age structure of the barges, like the above-mentioned rolling stock, is also low and needs modernization. This is due to the fact that:

- 100% self-propelled barges were produced in the years 1949-1979;

- 47.93% barges without own propulsion were produced in the years 1949-1979 (up to 1989 it is almost 94%).

The generic structure of the rolling stock is dominated by units used in the pushed system. This type of transport accounts for 85.12% of all shoulder stock, which in 2017 transported 3538,800. tons of cargo (61.3% of all goods transported by inland navigation). In the group of shoulder stock, watercraft with smaller construction parameters predominated, requiring lower technical standards of the infrastructure.

**Table 31 Structure of vessels in Slovakia (2017)<sup>23</sup>**

Types of vessels	Passenger/freight transport	Number
Tugs	freight	33
Motor cargo boats	freight	10
Dry - cargo barges	freight	93
Tank Barges	freight	5
Ro-Ro boats	freight	2
Passenger ships	passenger	12

In 2017, a total of 155 vessels were registered in the SR, of which 12 are designated for passenger transport. Most of the vessels are designed for the transportation of dry materials.

## 5. Conclusions

The share of the inland waterway transport in Slovakia is low in comparison with other transport modes. The only performance in the inland waterway transport are realised on the river Danube. In the Žilina region there are not navigable waterways at the moment, but there are planned development of the Váh inland waterway.

Water freight transport in the Czech Republic is very low, especially for the long-term absence of necessary investments in the modernization and extension of the waterway network. There is, therefore, no sustainable year-round traffic with other states, especially for the unreliability of the short regulated Elbe at the border with Germany. This situation can be improved only by immediate investments, especially in the "bottlenecks". At the beginning of the 20th century, the performances on the Elbe were greater than on the Rhine.

The potential for the modal shift of freight transport on the waterways is currently good due to the lack of capacity on the roads and railways and the growth forecasts of freight transport in the Czech Republic and throughout Europe in the coming years.

Water transport in the Czech Republic is declining due to a lack of infrastructure. The reason for this is the lack of state activity in the last 30 years. For development, it is crucial to complete the Děčín cruise stage and to connect the Moravian-Silesian industrial region to the developing Odra waterway by navigability the Odra at least to Ostrava in the Va class.

The network of waterways in Poland has shaped the natural layout of rivers and canals, built primarily in the 18th and 19th centuries. In Poland, approximately 3654 km of inland waterways are designated, of which about 91% are actually exploited. However, they constitute a heterogeneous network, created by a set of separate and differing classes sections (there are 7 classes of waterways, of which 4 are of regional importance and 3 of international importance), used to varying degrees depending on the class and operating parameters. Out of the total length of 94.1% of these roads belong to classes I-III (of regional significance), and only 5.9% (214.1 km) have parameters corresponding to the requirements of inland waterways of international importance (class IV or Va / Vb). Another limitation for inland water transport is the duration of the navigation period, allowing the movement of vessels without obstacles, which arise, inter alia, from

the occurrence of ice phenomena. As a rule, the navigation period usually runs from March 16 to December 15, and the period of the winter navigation break from December 16 to March 15. Real possibilities of economic inland transport occur in principle only on four sections of waterways in Poland: Górna Odra and the Gliwice Canal (Odra Waterway from Gliwice to Brzeg Dolny), Dolna Odra from Warta to Zalew Szczeciński, Dolna Vistula below Tczew, Górna Wiśle and Kanał Łęczyński (from Oświęcim to Kraków). Currently implemented plans for the reconstruction and development of waterways in Poland assume an increase in the use of waterways for the needs of freight transport. After years of neglect of transport infrastructure in Poland, including inland waterways, thanks to the EU transport policy, there is a chance to restore waterway parameters, and inland navigation, which would help mitigate the negative effects of transport development, manifested by the clear dominance of road transport - both in transport of cargo as well as passengers. In order to be able to talk about the inclusion of inland ports in Poland in logistics systems, care should be taken to include waterways in a combined transport system; adaptation of waterways, especially Odra, to international standards; significant increase in expenditure on the development of waterways; use of EU assistance for infrastructure investments in inland waterway transport.