Integrating Danube Region into Smart & Sustainable Multi-modal & Intermodal Transport Chains

Analysis of European & National Transport Policies, Strategies & Programmes with regard to the Danube ports

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4 Introduction

Work Package 3 - *Integrated Port Development* is responsible for integrated sustainable infrastructure port development and project capitalization activities supporting the optimal use, development and integration of ports into the DR's economic infrastructure and transport system. Port development must be strategically embedded into both the regional economic development and transport policies.

The deliverable D.T3.1.2 - *Analysis of European & National Transport Policies, Strategies & Programs with regard to the Danube Ports, Summary Report* - is focused on an analysis of European and national transport policies, strategies and programs regarding the Danube ports. The analysis contains an in-depth insight of national transport strategies and is based on national reports delivered by project partners.

The main documents identified by the project partners are:

AUSTRIA: Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology is the Austrian ministry responsible for transport policy in Austria. Key documents for future transport development are: *Austria's 2030 Mobility Master Plan*, RTI Strategy (RTI -Research, Technology and Innovation Strategy Mobility) and the *Action Programme for the Austrian Danube until 2022*, published in 2015) - an integrative strategy for a well-balance development of the Danube, that reconciles objectives for navigation, ecology and flood protection.

SLOVAKIA: A *"Strategic plan for the development of transport in the Slovak Republic until 2030 (2016)"* replaced all the previous strategic documents focused on modes separately. Along with abovementioned document, a specific document - *"Water transport development concept of the Slovak Republic"* is in force since 2000 (updated in 2004) for water transport. Since the concept for water transport was not designed to target the specific year, it stays valid.

HUNGARY: The main national transport strategies, completed by or with an assignment from ministries and/or governmental bodies, mentioning ports, are: the National Port Development Master Plan, the National Transport Infrastructure Development Strategy, the National Danube Water Transport Strategic Plan, the National Shipping Strategy.

National Port Development Master Plan (2019) is a Master Plan on strengthening Danube transport through the infrastructural development of TEN-T ports. The National Transport Infrastructure Development Strategy was prepared under the leadership of the Ministry of National Development and the Transport Development Coordination Centre and covers the period 2014-2050.

National Danube Water Transport Strategic Plan (2013) is an outcomes of the ProDuna project supporting Hungarian inland navigation, financed with EU co-fund. The document is a base to define the organizational and legal framework of inland navigation, its infrastructure and facilities, its

public freight transport segment, education and R&D, eventually to improve the competitiveness of the industry.

CROATIA: Government Program 2020-2024 is a short-term act which is of national significance. It defines priorities of the Government during its mandate. Transport infrastructure is one of the priorities of the Government Program. One of the statements is development of inland ports (Osijek, Vukovar, Slavonski Brod, Sisak) and inland waterways transport (Drava, Danube, Sava).

Transport Development Strategy for the period 2017-2030 is an overall transport strategic document. Based on it Croatian Government adopt River Transport Development Strategy which contains basic specific goals that are relevant for inland navigation and ports.

Ministry of Sea, Transport and Infrastructure Strategic Plan 2020-2022 gives the vision of the highly developed, efficient, secure, environmental friendly and modern transport and communication system which should be integrated in international transport network and which should maximize utilization of the transport and geographic position of Republic of Croatia and meet the needs of the cargo and passenger freight.

SERBIA: Transport policy in the Republic of Serbia is characterised by developing infrastructure network especially for road transport and intensively developing inland ports infrastructure in the last few years. The selected strategies which were analysed are: Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia 2008-2015, Strategy on waterborne transport development of the Republic of Serbia, 2015-2025, National Program for the Development of Railway Infrastructure 2017-2021.

BULGARIA: The Ministry of Transport, Information Technology and Communications, and its affiliated institutions are the main state entities responsible for the government's policies in the field of transport. The most important transport strategies with relevance to the upcoming programming period are the *Integrated Transport Strategy for the period until 2030* and the *Transport Connectivity programme 2021 – 2027*. Some other documents with focus on the subject are the Strategy for the Development of Road Infrastructure 2016 – 2022, the National Strategy for Road Safety 2021 – 2030, the Programme for the Development and Exploitation of Railway Infrastructure 2019 - 2023, the Strategy for Maritime Safety and Protection of the Environment from Ship-source Pollution, and the Maritime Spatial Plan of the Republic of Bulgaria 2021 – 2035

ROMANIA: In Romania the national transport policies, strategies & programs with regard to the Danube ports are established by the central authority – the Ministry of Transport and Infrastructure. The main strategic document for transport infrastructure is the General Transport Master Plan (modified at the end of 2021). For ports, the document will be supplemented with a Naval Transport Strategy. The Government Program 2021 – 2024 is a short term strategy of national significance which defines the priorities of the Government during its mandate

EUROPEAN UNION: EU transport policy helps keep the European economy moving by developing a modern infrastructure network allowing the transport of people and goods to be quicker and safer, while at the same time promoting sustainable and digital solutions.

Transport policy of the EU is largely based on a 2011 White Paper, comprising 40 initiatives designed to generate growth, jobs, reduce dependence on imported oil, and cut the sector's carbon emissions by 60% by 2050. The selected EU transport policies are: 2011 White Paper: Roadmap to a single European transport area, Trans-European Transport Network Policy (TEN-T Guidelines, Regulation 1315/2016 with the proposal for the revision of the TEN-T Guidelines - COM(2021) 812 final), Sustainable and Smart Mobility Strategy, NAIADES III Action plan and the European Rail Network for Competitive Freight (Regulation EU 913/2010)

5 Strategies analysed in this report

Transport development strategies, policies and programmes identified to have substantial or more than marginal influence on ports are listed in the following table.

Transport development strategies, policies and programmes	Country	Mentioning ports	Not mentioning ports, but could or should affect ports	Low influence on ports	Medium influence on ports	Strong influence on ports
Austria's 2030 Mobility Master Plan	AT		X			x
RTI Strategy Mobility	AT		X		x	
Danube Action Programme by Bmvit until 2022	AT	X				x
Strategic plan for the development of transport in the Slovak Republic until 2030	SK					
Program Statement of the Government of the Slovak Republic for 2021 – 2024	SK	X				X
Water transport development concept of the Slovak republic (2000) updated version (2004)	SK		X			
National Port Development Master Plan (Országos Kikötőfejlesztési Főterv) 2019	HU	X				X
National Transport Infrastructure Development Strategy (Nemzeti Közlekedési Infrastruktúra-fejlesztési Stratégia) 2014	HU	X		X		

National Danube Water Transport Strategic Plan (Nemzeti dunai vízi közlekedési stratégiai terv) 2013	HU	X		X		
National Shipping Strategy (Nemzeti Hajózási Stratégia) 2012	HU	X			X	
Hungarian shipping and the Danube Strategy, and the Széchenyi Plan (A magyar hajózás és a Duna Stratégia, valamint a Széchenyi terv) 2010	HU	X			X	
Budapest Agglomeration Railway Strategy (Budapesti Agglomerációs Vasúti Stratégia) 2020	HU					
Mid-term Logistics Strategy (Középtávú Logisztikai Stratégia) 2013	HU					
River Transport Development Strategy 2008-2018	HR	X				
Mid-term Development Plan for Inland Waterways and Ports 2009-2016	HR	X				
National Program for the Railway Infrastructure 2016-2020	HR					X
Construction and Maintenance of Public Roads Program 2017-2020	HR		X			
Air Transport National Safety Program	HR			X		
Transport Master Plan of the East Croatia Functional Region	HR	X				X

Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia 2008-2015	RS	X				X
Strategy on Waterborne Transport Development of the Republic of Serbia, 2015 -2025	RS	X				X
Railway Master Plan	RS		X			
Integrated Transport Strategy for the period until 2030	BG	X				X
Transport Connectivity programme 2021 – 2027	BG	X				X
The Government Program 2021 - 2024	RO	X			X	
General Transport Master Plan 2020 - 2030	RO	X			X	
Institutional Strategic Plan	RO	X			X	
Naval Transport Strategy	RO	X				X
White Paper 2011 – Roadmaps to a single European transport area	EU	X				X
Trans-European Transport Network Policy	EU	X				X
The Sustainable and Smart Mobility Strategy	EU	X				X
NAIADES III Action plan	EU	X				X
The European Rail Network for Competitive Freight	EU	X			X	

Table 1: Summary of analysed transport development strategies

5.1 Gaps in transport development strategies of EU and Danube countries

The following table presents the gaps identified in the strategies identified by the countries (AT, SK, HU, HR, RS, BG, RO) and at the EU level, as well as recommended actions to close those gaps.

Gap level	Country	Gap	Action (recommendation) to close the gap
1	**AT**	**Austria's 2030 Mobility Master Plan** Gap 1: Lack of recognition of inland ports as crucial aspects for improving inland waterway transport (level 1). Gap 2: No reference to the role of ports in providing green energy to vessels (level 2). Gap 3: Lack of recognition of ports for achieving climate-neutral supply chains (level 3).	Recognition of ports as central multimodal transport hubs that are crucial for increasing the share of inland waterways in freight transport in the plan Reference to the potential of ports as facilitators of clean energy and alternative fuel provision Underlining the benefits of ports regarding climate-neutral supply chains
1	**AT**	**RTI-Strategy Mobility – (Research, Technology, Innovation)** Gap 1: Lack of recognition of the role of inland ports for the increased integration of inland waterway transport (level 1). Gap 2: Lack of recognition of inland ports for a climate-neutral urban logistics network (level 2).	Recognition of ports as central multimodal transport hubs that are crucial for increasing environmentally friendly transport modes, such as inland waterways Emphasising the potential role of ports in the mission field in making urban mobility climate-neutral Identifying the benefits of ports as experimental spaces for innovation and research activities, as they combine

Gap level	Country	Gap	Action (recommendation) to close the gap
		Gap 3: No recognition of inland ports as experimental spaces for innovation and research activities (level 3).	different modes of transport, they are embedded in the urban logistics network and thus connect various stakeholders and also act as key interface of international and regional transport
	SK	**Strategic plan for the development of transport in the Slovak Republic until 2030**	
2	**SK**	Minimum level of investment in the development and modernization of waterway infrastructure and its components	Investments in the development and modernization of waterway infrastructure and their components have recently been made to a minimal extent, mainly due to insufficient financial resources and due to ambiguities regarding competencies in the field of waterway development and modernization.
2	**SK**	Insufficiently completed parts of waterways	Part of the waterway are considered to be the places where vessels stand in or out of ports, huts, locks, lanes, docks, port mooring facilities, bank fortifications, regulatory structures, signal signs, waterways, waterway protection zones, water parts, shore modifications and waterfront ports. However, the construction of only basic and necessary components has been solved in this area for a long time and it is necessary to complete it, also with connection to the consumption of electricity and drinking water

Gap level	Country	Gap	Action (recommendation) to close the gap
		Reconstruction and modernization of the locks of the Gabčíkovo waterworks	where it is desirable and appropriate. Those parts of the waterways that are built should be reconstructed and a maintained access road provided. The right lock of the Gabčíkovo Waterworks has been modernized since 2019 and is in operation. The modernization of the left lock is planned.
1	**SK**	Inadequate operational condition of the Váh Waterway	Setting the principles of sustainable financing of the transport sector Periodic preparation of transport infrastructure maintenance plans The process of preparation and implementation of development projects, including related activities Completion and ongoing maintenance of databases of individual subsectors Regular updates of strategic and development documents
5	**SK**	Improving the Slovak public ports system Modernization in progress, however not completed Property and administrative relations not yet settled	By 2030, it is planned to modernize two TEN-T ports on the Danube River: Bratislava and Komárno. The priority project is the modernization of the port of Bratislava Continue with initiated activities (feasibility studies, clarification of property and administrative relations) according to agreed schedule and actions
1	**HU**	**National Port Development Master Plan**	Education training, Technological modernization, Financing,

Gap level	Country	Gap	Action (recommendation) to close the gap
		low utilization of port capacity	Investment promotion, industrial establishment, Legislation, concepts, Infrastructure development, Career model, Digitalization, automation, Sustainability, Market research, innovation
1	**HU**	**National Transport Infrastructure Development Strategy (2014 – 2050)** low-level navigation conditions on the Danube	Ro-La transport - Long-distance, international road traffic can be diverted to rail and waterways, only if the cost levels of the latter modes over the entire supply chain, the reliability, delivery time and flexibility of the service chain approach the road Increase the size of port areas with infrastructure for multimodality by 8,000 m2 in 2030 and 15,000 m2 in 2050. Increase the length of water infrastructure equipped with intelligent transport system to 378 km in 2030.
1	HU	**National Danube Water Transport Strategic Plan (2019)** no meaningful dialogue between sectors, interest groups. Based on the economic and transport policy ideas and the resolutions of the professional organizations and enterprises of inland waterway transport, despite the efforts to develop the Danube waterway is being expressed in contradictory opinions in other fields	Action: open conferences, public data Implementation strategy: common planning with all the stakeholders Timeline: no exact time horizon within the strategy Participants: NGOs, freight forwarders, ministries, citizens, environment protecting activists, port owners and operators

Gap level	Country	Gap	Action (recommendation) to close the gap
		(primarily in the field of environmental protection).	
4	**HU**	**National Shipping Strategy (2012)** Very few logistics centers settled by the Danube	Construction and modernization of berths Cargo ports: • Trimodal ports with logistics center (rail and road connection) • Transshipping ports (road connection) Intermittent loading bays (mainly for agricultural products)
1	**HU**	**Budapest Agglomeration Railway Strategy (2020 - 2040)** Budapest-centric network, but no more physical capacity	The expansion of the southern ring railway is the first step to solve the bottleneck with a frequency of 10-15 minutes per direction, new transit connections, direct, cross-Danube, diameter suburban services. Tunnel connecting Kelenföld, Déli and Nyugati railway stations Suburban and urban railway network – rail service crossing Budapest Long-distance network – Budapest is not a terminus, long-distance trains can cross the country
	HU	**Mid-term Logistics Strategy (2013 – 2020)** a) weakness of HR b) weakness of stakeholders c) weakness of node infrastructure d) weakness of IT infrastructure	a) high-quality, practical, interdependent, and interoperable educational activities in secondary and higher education and vocational training tailored to company needs b) developing the logistics role and culture of Hungarian SMEs and

Gap level	Country	Gap	Action (recommendation) to close the gap
		e) weakness of international relations f) weakness of networking and cooperation g) weakness of R&D	contribute to the success of the sector through a coordinated effort by the private and civil sectors and the public administration c) Addressing the Budapest-centric nature of node infrastructure d) Facilitate in-house IT developments to reduce logistics transaction costs in the SME sector e) Substantially promote the development of networking and cooperation in the logistics service sector f) Development of logistics knowledge bases, flow and use of knowledge – support of less common but essential forms of innovation for rationalization of logistics processes (process and organizational innovation solutions) – harmonization of research supply and corporate innovation needs (R&D gap), support for innovation networking.
1	**HR**	**River Transport Development Strategy 2008-2018** Gap 1: lack of continuity of strategic documents Gap 2: lack of project defining and financing sources availability due to strategy missing	Ensure that strategic documents are prepared on time in order not to have a few years gap between them Ensure that strategic documents are up to date in order to enable financing background of the specific projects

Gap level	Country	Gap	Action (recommendation) to close the gap
2	**HR**	**Mid-term Development Plan for Inland Waterways and Ports (2009 – 2016)** Gap 1: Avoid projects that are obstacle to one another or many other projects Gap 2: Mid term strategic documents should be adjustable to real needs	Define priority projects and try to define are any of those projects and their implementation uncertain and how (risk defining) Foresee the risks for each project/objective realization, measures to prevent them
1	**HR**	**National Program for the Railway Infrastructure for the Period 2009 - 2016** Gap 1: overlap of the strategic projects from different transport sectors	To strictly define which project are priorities
2	**HR**	**Construction and Maintenance of Public Roads Program 2017-2020** Long periods for significant road connections realization	To recognize the priorities and significance of specific projects which have the influence on multimodal chains
2	**HR**	Transport Master Plan of the East Croatia Functional Region Wrong information regarding inland navigation sector	When preparing such documents consult authorities from each specific transport field for correct information
1	**RS**	**Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia 2008 - 2015** Gap 1: Lack of coherent and relevant policy or strategy to guide the development of	The Republic of Serbia needs to develop and adopt a new transport Strategy.

Gap level	Country	Gap	Action (recommendation) to close the gap
		the transport sector in Serbia (outdated Strategy) - Level 1 Gap 2: Insufficient integration between the individual transport modes (railway, road, inland waterway) - Level 1 Gap 3 Non harmonised national and international (EU) legal framework - Level 2 Gap 4 There is no concept of regional development and connection with trading partner countries - Level 2	Form a cooperation committee, intersectoral coordination board or any other formal cooperation body in order to avoid any conflict of interests and to coordinate strategies and actions and acknowledge this need in relevant legislation Suitable framework must be established to take care of European tasks for traffic and transport Create a concept of regional development and connect with trading partner countries
1	**RS**	**Strategy on Development of Waterborne Transport of the Republic of Serbia for the period from 2015 to 2025** **Gap 1:** lack of information on the availability of transhipment capacities in ports and insufficient information on the benefits of water transport - Level: 2 **Gap 2:** . lack of harmonised international administrative procedures, including border crossing, and corresponding national/international IWW regulations for implementation of the	Present and promote ports on inland waterways in the Republic of Serbia on international level and educate potential domestic economic entities. Organise experts from different transport models which make analysis relevant to the EU legal framework and give recommendations for harmonisation of national IWW regulations by implementing simplified administrative procedures. Lobbying for interests of ports with relevant institutions of the

Gap level	Country	Gap	Action (recommendation) to close the gap
		digitalisation of these processes - Level: 1 **Gap 3:** . lack of awareness that inland ports are crucially important elements of the transport network - Level: 1 **Gap 4:** lack of intersectoral coordination and cooperation in port and spatial planning - Level 1 **Gap 5:** lack of attention to automation in inland port operations - Level: 2	EU, supported by various impact assessments and other supportive studies on inland ports Form a permanent body/commission/board of relevant decision-making organisations that will coordinate their activities and safeguard mutual interests in spatial planning and strategic economic/industrial planning in relevant transport strategies and policies. Establish an appropriate funding mechanism or adapt the existing ones so as to include and prioritise research and innovation activities in the automation of port operations and get involved in policy making processes
1	**RS**	**National Program for public rail infrastructure** Gap 1: The National Program for the Development of Railway Infrastructure is outdated - Level: 2 Gap 2: Lack of intersectoral coordination between strategies in water and railway transport - Level: 1 Gap 3: Lack of connections or rail infrastructure capacities in river ports in the Republic of Serbia - Level: 1	Republic of Serbia needs to develop and adopt a new National Program for the Development of Railway Infrastructure Secure that inland ports are clearly identified and mentioned in the new regulation for railway transport. Get involved in the elaboration of the new transport strategies in the early phase and/or during the public consultations.
1	**BG**	**Integrated Transport Strategy for the period until 2030** Gap 1: Lack of investments in construction and	Concrete measures for the development of facilities in the ports of Vidin and Silistra Modernization and development of the network of lower class roads

Gap level	Country	Gap	Action (recommendation) to close the gap
		development of river port facilities - Level: 1 Gap 2: Insufficient measures in support of road infrastructure in port areas - Level: 1 Gap 3: Insufficient measures in support of railroad infrastructure and intermodality in port areas - Level: 2	in all regions along the Danube river and construction of the Ruse – Veliko Tarnovo motorway. Construction of a railway connection with the town of Tutrakan.
3	**BG**	**Transport Connectivity programme 2021 – 2027** Gap 1: Insufficient investments for the development of railroad infrastructure in river port areas - Level: 3 Gap 2: Insufficient investments for the development of road infrastructure in river port areas - Level: 4	Modernization and rehabilitation of railway stations in port cities and of the rail lines Vidin – Sofia, Ruse – Gorna Oryahovitsa and Ruse – Varna. Rehabilitation of first, second and third class roads in the provinces of Vidin, Montana and Vratsa.
3	**RO**	**The Government Program for the period 2021 – 2024** More focus on the maintenance of the IWT infrastructure	Maintenance plans approved at the level at the companies responsible for the administration of transport infrastructure and the Strategic institutional plan at the level of MTI
1	**RO**	**General Transport Master Plan** Naval Transport Strategy	Elaboration of the Naval Transport Strategy
	EU	2011 - White Paper on transport – Roadmap to a	Lobbying for interests of ports with relevant institutions of EU, supported by various impact

Gap level	Country	Gap	Action (recommendation) to close the gap
		single European transport area **Gap 1:** lack of awareness that inland ports are crucially important elements of transport network - Level: 1 **Gap 2:** lack of market access regulation for inland ports. - Level: 2 **Gap 3:** lack of intersectoral coordination and cooperation in port and spatial planning - Level: 1 **Gap 4:** lack of attention to automation and autonomation in inland port operations. - Level: 2	assessments and other supportive studies on inland ports. Get involved in the elaboration of the new transport policy/roadmap in the early phase and/or during the public consultations. Form permanent body/commission/board of relevant decision-making organizations that will coordinate their activities and safeguard mutual interests in spatial planning and strategic economic/industrial planning in relevant transport strategies and policies. Establish an appropriate funding mechanism or adapt the existing ones so as to include and prioritize research and innovation activities in the automation of port operations and involved in policy making processes.
1	**EU**	**Trans-European Transport Network [TEN-T][1] policy** **Gap 1:** lack of recognition of inland ports as cross-border sections of the transport network - Level: 1 **Gap 2:** lack of recognition of inland ports as poly sectoral hubs of transport, industry, logistics and energy where sustainable production and	Secure full recognition of inland ports as cross-border sections of the inland waterway transport network to obtain prioritization in transport infrastructure development. Include inland ports in the new TEN-T policy as poly sectoral hubs, like for maritime ports, in an appropriate and unambiguous article of the new regulation. Secure clear mentioning of inland ports in the new regulation acknowledging the exact same role of inland ports in inland waterway

[1] Source: https://ec.europa.eu/transport/themes/infrastructure/ten-t_en

Gap level	Country	Gap	Action (recommendation) to close the gap
		cargo operations take place. - Level: 1 **Gap 3:** lack of focus on development of inland ports as decarbonization hubs. - Level 1	transport and short sea shipping as maritime ports have in short sea shipping.
2	**EU**	**Sustainable and Smart Mobility Strategy** **Gap 1:** inland ports are not fully treated as facilitators, promoters and suppliers of clean energy solutions, sustainable transport and alternative fuels supply - Level: 1 **Gap 2:** incentive schemes for greening of inland ports are scarce and insufficient - Level: 2	Pursue full endorsement of inland ports, on policy and regulatory levels, as facilitators, promoters and suppliers of clean energy solutions, sustainable transport and alternative fuels supply. Analyse the regulatory framework for all types of similar incentives, existing and potential, design and propose different incentive schemes for different levels of greening activities in ports.
2	**EU**	**NAIADES III Action plan** **Gap 1:** Priority in projects given to undefined "dedicated terminals" - Level: 2 **Gap 2:** Quality of inland port infrastructure is not specified and no criteria and appropriate KPIs are identified to assess the quality of inland port infrastructure - Level: 1 **Gap 3:** No harmonized European inland waterways	Clearly define the term "dedicated terminals" to neutralize any ambiguous interpretations and misleading of potential project proponents. Clearly define the quality of inland port infrastructure, the criteria for quality and design appropriate KPIs to measure the compliance of ports' infrastructure with the targeted quality criteria/levels.

Gap level	Country	Gap	Action (recommendation) to close the gap
		rules on preventing pollution from ships - Level: 3 **Gap 4:** Lack of recognition of inland ports' role in creating "Smart inland waterway transport" and adequate financial instruments or call topics - Level: 2	Commence work on common regulatory framework for rules on prevention of pollution of inland waterways by ships. Secure full and unambiguous recognition of inland ports' role in creating "Smart inland waterway transport" and provide relevant funding instruments and schemes for appropriate project and initiatives.
3		**The European Rail Network for Competitive Freight** **Gap 1:** lack of coordination between the national rail infrastructure managers and port authorities in terms of rail connections and port internal rail infrastructure and recognition of the need for such coordination in the Regulation. Level: 3 **Gap 2:** determined port rail infrastructure is in danger of being left out of the scope of EU legislation. Level: 2 **Gap 3:** Specific position of port rail infrastructure in terms of charging is not recognized Level: 1	Form a cooperation committee, intersectoral coordination board or any other formal cooperation body in order to avoid any conflicting interests and to coordinate strategies and actions and acknowledge this need in relevant legislation. Ensure that the port rail infrastructure remains an integral part of the TEN-T rail network and that it remains within the scope of EU legislation and thus preserve its importance. Ensure that the autonomy of charging for port infrastructure, including the port's rail infrastructure is respected as laid out in Port Services Regulation (PSR).

Gap level	Country	Gap	Action (recommendation) to close the gap

Table 2: Gaps in EU & Danube region transport development strategies

5.1.1 Current state

Detailed analysis on the current state of each national transport strategy are presented in the national reports, as well as an analysis of the EU relevant transport strategies. The current state of each strategy addressed the questions like:

- What is the strategy about?
- What is the period or time horizon of this strategy?
- What are its objectives (overall objectives and specific objectives) and
- How does the strategy (action plan, programme, etc.) plans to reach those objectives?
- What does that strategy solve? What are its main outputs?
- What is the current state of issues relevant to ports, on the basis of this strategy?
- Why do you think it is important (or could be important) for ports?
- How it affects or could affect ports, positively or negatively?

5.1.2 Desired state

A well, as at the Chapter 5.1.1, for each strategy identified a brief analysis was done in the countries national reports describing what it was desired to achieve within this strategy or with the strategy and what are the objectives of the desired state.

5.1.3 Gap identification

The gap identification process consisted in an analysis of the "hole" between the current state and the desired state. Everything in between was considered as a gap/gaps. Gaps could be of any nature: technical, business, social, technological, legal, economic, political, cultural, etc. The exercise of analysis performed by the project partners has the role of preventing future gaps in other strategies and what is missing in order to bridge the concrete gap, physical or non-physical.

For each gap it was assigned a level, from 1 to 5, where the 1st level gap is the most critical one and the 5th level gap is the least critical (least urgent) gap.

5.1.4 Recommendations to close the gaps

Key steps to bridge the gap(s) are actually the future recommendations or elements of the *Consolidated strategy plan (Output O.T3.1)*.

6 Gap analysis summary

6.1 Gaps, actions to close the gaps and strategy inputs

Below table summarizes the gaps and actions to close the identified gaps, for each strategy identified by the countries and for EU strategies analysed for the scope of this report.

With this exercise, for each strategy it was assigned a gap level in the first column, from 1 to 5, where the 1st level gap is the most critical one and the 5th level gap is the least critical (least urgent) gap. The exercise of analysis performed by the project partners has the role of preventing future gaps in other strategies and what is missing in order to bridge the concrete gap, physical or non-physical.

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
AT / 1	**Austria's 2030 Mobility Master Plan** - Establishing ports as central multimodal transport hubs that are crucial for increasing the share of inland waterways in freight transport. - Development of ports to provider and produces of green energy for vessels as well as for own functioning	- Achieving climate neutrality in the transport sector in 2040 - It stated that rail and inland waterways have a clear advantage regarding energy efficiency, but they need to be more attractive and reliable for the market to embrace these advantages The plan aims at 100% of inland vessels will become climate-	- Recognition of ports as central multimodal transport hubs that are crucial for increasing the share of inland waterways in freight transport. - Reference to high potential of ports to provide and produce green energy for vessels as well as for own functioning	Gap 1: Lack of recognition of inland ports as crucial aspects for improving inland waterway transport (level 1). Gap 2: No reference to the role of ports in providing green energy to vessels (level 2). Gap 3: Lack of recognition of ports for achieving climate-neutral supply chains (level 3).	Action 1: Recognition of ports as central multimodal transport hubs that are crucial for increasing the share of inland waterways in freight transport in the plan Action 2: Reference to the potential of ports as facilitators of clean energy and alternative fuel provision Action 3: Underlining the benefits of ports regarding climate-neutral supply chains	Action 1: 09/2022 – 12/2030 Action 2: 09/2022 – 12/2030 Action 3: 09/2022 – 12/2030

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
		neutral by 2040				
AT / 1	**RTI-Strategy Mobility** Recognition of the benefits of ports in the transition of the transport sector towards climate neutrality	- Cities: Making urban mobility climate-neutral - Regions: Mobilising and sustainably connecting rural areas - Digitalisation: Operating infrastructure, mobility and logistics services efficiently and in a climate-friendly manner - Technology: Develop environmentally compatible transport technologies	- Recognition of ports as a central element of sustainable and multimodal urban transport logistics as efficient hubs connecting several modes of transport. - Ports could be potential experimental spaces for testing innovation and research activities in terms of multimodal transport services, decarbonisation, or digitalization processes	Gap 1: Lack of recognition of the role of inland ports for the increased integration of inland waterway transport (level 1). Gap 2: Lack of recognition of inland ports for a climate-neutral urban logistics network (level 2). Gap 3: No recognition of inland ports as experimental spaces for innovation and research activities (level 3).	Action 1: Recognition of ports as central multimodal transport hubs that are crucial for increasing environmentally friendly transport modes, such as inland waterways. Action 2: Emphasising the potential role of ports in the mission field in making urban mobility climate-neutral. Promoting the integration of ports into city logistics or ports as suppliers to the city, as well as enablers of green logistics Action 3: Ports can be an ideal experimental space for innovation and research activities, as it combines different modes of	Action 1-3: 09/2022 – 12/2030

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
					transport, it is embedded in the urban logistics network and thus connects various stakeholders. Inland ports as key interface of international and regional transport routes can also connect international and national requirements and trend.	
AT / 1	**Danube Action Programme until 2022** Promotion of ports as facilitators and providers of green energy solutions/alternative fuels Specification of development direction of ports regarding climate goals	- Action programme defines measure to expand the range of multimodal transshipment facilities on the Danube - Aims at reduction of greenhouse gas emissions and increase of the environmental friendliness of the Danube navigation Aims at Increasing the competitiveness of Danube navigation in logistics networks	- Stronger promotion of ports as facilitators and providers of alternative fuels and clean energy solutions to achieve the reduction of greenhouse gas emissions and increase of the environmental friendliness of Danube navigation Specification of expansion of multimodal transshipment facilities regarding future requirements of ports (coordination with Mobility Master Plan 2030, not yet published	Gap 1: Lack of specific recognition of ports as providers of alternative fuels and producers of green energy solutions (level 1). Gap 2: Lack of specification of expansion of multimodal transhipment facilities (level 2).	Action 1: In order to achieve the already set goal of reducing emissions and making Danube navigation more environmentally friendly, ports are to be recognised as crucial actors. Ports can be both providers of alternative fuels and producers of green energy solutions (such as biofuel plants, photovoltaic parks, hydrogen producers) Action 2: Specification of priorities of expansion of multimodal transhipment facilities in coordination with other relevant	Action 1-3: 09/2022 – 12/2030

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
			Master Plan Freight Transport)		transport strategies/programmes (Mobility Master Plan 2030, Master Plan Freight Transport). Definition of specific objectives and requirements for ports with regard to climate goals	
SK / 1	Improve navigation conditions on the Danube were provided as reasonable and implementable	-	-	Gap 1: Minimum level of investment in the development and modernization of waterway infrastructure and its components Gap 2: Insufficiently completed parts of waterways Gap 3: Inadequate operational condition of the Váh Waterway	Action 1: Implement technical measures to improve the navigability of the Danube waterway Action 2: Setting the principles of sustainable financing of the transport sector Action 3: The process of preparation and implementation of development projects, including related activities	2030
SK / 1	Improving the Slovak public ports system – ports Bratislava and Komarno	-	-	Gap 1: Modernization in progress, however not completed. Gap 2: Property and administrative relations not yet settled	Action 1: Continue with initiated activities according to agreed schedule and actions Action 2: Continue with initiated activities according to	2023

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
					agreed schedule and actions	
SK / 2	Determination of eligibility and conditions for development, modernization and reconstruction of other monitored waterways in the Slovak republic	-	-	Gap 1: Unsatisfactory cooperation / communication between stakeholders Gap 2: Lack of monitoring Gap 3: Elimination of Gabčíkovo bottleneck	Action 1: Increased cooperation between stakeholders Action 2: Improved monitoring Action 3: Modernization of Gabčíkovo waterworks	Action 1: 2023 Action 2: 2021 Action 3: 2022
SK / 2	Development and modernization of transport infrastructure	-	-	Gap 1: Modernization in progress, however not completed. Gap 2: Property and administrative relations not yet settled	Action 1: Continue with initiated activities according to agreed schedule and actions Action 2: Continue with initiated activities according to agreed schedule and actions	2023
HU / 1	Encourage mode change Generate additional demand Establishment of a financing system Human resource development Creating a sustainable regulatory environment	Danube ports have transformed into logistics hubs They more fit into their regional economy, contribute to economic growth and job creation 53 inland ports, within which 3 are national	- Danube inland ports become determinant and efficient multimodal hubs in their regional transport system to carry 10% of domestic cargo traffic on	Low utilization of port capacity	Education training, Technological modernization, Financing, Investment promotion, industrial establishment, Legislation, concepts, Infrastructure development, Career model, Digitalization, automation,	12/2030

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
		public ports and 1 public port - Capacities are much higher than utilized	ecofriendly inland waterways		Sustainability, Market research, innovation	
HU /2	Improvement of health and property safety Reduction of territorual inequalities Strengthening international relations Strengthening resource-efficient modes of transport Increase the quality and efficiency of transport services Repair of physical components	- The volume of freight transport on water – 5-6 million tonnes per year and it exclusively means Danube ports – decreases in terms of loading and shows a slow increase in terms of unloading year by year.	- an equivalent task to increasing competitiveness is to ensure the preservation of natural and human values and resources, the conditions for sustainable growth, and the coordination of environmental and economic, national and EU objectives that may conflict with each other.	low-level navigation conditions on the Danube	Ro-La transport Increase the size of port areas with infrastructure for multimodality by 8,000 m2 in 2030 and 15,000 m2 in 2050 Increase the length of water infrastructure equipped with intelligent transport system to 378 km in 2030.	12/2050
HU / 2	market exploration and exploitation of explored markets development of infrastructure (shipping lanes, ports) fleet modernization	- despite the efforts to develop the Danube waterway is being expressed in contradictory opinions in other fields (primarily in the field	- an open, adaptable, dynamic economy based on competition and innovation, in which environmental protection plays a key role. This	no meaningful dialogue between sectors, interest groups	open conferences, public data and information common planning with all the stakeholders	no exact time horizon within the strategy

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	job creation and vocational training the image of waterborne transport institutions with efficient and sufficient capacity	of environmental protection).	is reflected on the one hand, in the greater use of water transport, which is less polluting than other modes of transport, and on the other hand, in the replacement of technically obsolete and more greenhouse gas-emitting vehicles and the increased use of alternative fuels.			
HU / 2	Mobility needs between and within Member States continue to increase Emissions regulations are becoming stricter CO2 emissions from the combustion of coal-based fuels are directly proportional to the amount of fuel used Individual modes of transport are becoming more valuable in the	the huge increase in traffic between Europe and the Far East will lead to an increase in traffic to the EU's eastern seaports. - The rapid growth of road transport is causing an environmental burden due to the important international road corridors passing	- Hungary is able to stop the current transit traffic with an adequate transport network, junctions and intermodal and multifunctional logistics centers, i.e. ports, and associated industrial parks, and provide added value. Further	very few logistics centres settled by the Danube	Construction and modernization of berths Cargo ports: Trimodal ports with logistics center (rail and road connection) Transshipping ports (road connection) Intermittent loading bays (mainly for agricultural products)	no exact time horizon defined in the strategy

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	settlement environment	through the country, and the infrastructural development of alternative routes bypassing	large increases in turnover can be achieved by diverting containerized goods by water.			
HU / 1	increase the number of passengers on suburban railways by 80% till 2040 through the implementation of interdependent, complex investments	523 000 journeys are made daily on the railway lines running to Budapest, 89% of which are suburban journeys. - In suburban traffic, following time is 30 minutes in passenger trains.	Commuters would like to have a railway that is reliable, fast and more connected to the city. With a suitable alternative, people are reluctant to give up driving. A new connection across the Danube provides the railway a new role in the capital - 93 trains per hour crossing the borders of Budapest	Budapest-centric network, but no more capacity	The expansion of the southern ring railway is the first step to solve the bottleneck with a frequency of 10-15 minutes per direction, new transit connections, direct, cross-Danube, diameter suburban services. Tunnel connecting Kelenföld, Déli and Nyugati railway stations Suburban and urban railway network – rail service crossing Budapest Long-distance network – Budapest is not a terminus, long-distance trains can cross the country	2040

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
HU / 1	managing logistics according to its economic weight which could make a significant contribution to employment and to expand investments and improve Hungary's competitiveness	- Hungary's logistics performance is ranked in the middle within the EU member states.	Companies organize their internal logistics processes more and more efficiently. Increased competitiveness Hungary becomes a logistics service center in the region	weakness of HR, of stakeholders, of node infrastructure, of IT infrastructure, of international relations, of networking and cooperation, of R&D	high-quality, practical, interdependent, and interoperable educational activities in secondary and higher education and vocational training tailored to company needs developing the logistics role and culture of Hungarian SMEs and contribute to the success of the sector through a coordinated effort by the private and civil sectors and the public administration Addressing the Budapest-centric nature of node infrastructure Facilitate in-house IT developments to reduce logistics transaction costs in the SME sector Ensuring more favourable conditions for cross-border logistics, make Hungary a more attractive logistics	2020

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
					investment destination. Substantially promote the development of networking and cooperation in the logistics service sector Development of logistics knowledge bases, flow and use of knowledge – support of less common but essential forms of innovation for rationalization of logistics processes (process and organizational innovation solutions) – harmonization of research supply and corporate innovation needs (R&D gap), support for innovation networking.	
HR / 1	**River Transport Development Strategy (RTDS)**	RTDS is a document which was valid for the period between 2008-2018 (Official Gazette 65/08). From 2018 and until today, new Strategy has not been adopted. From 2019 all strategic	It is important for the documents as RTDS to be up to date, not to have such a long gap between one and other for the next period of time. This is important, first of all, from the aspect of financing the	Lack of continuity of strategic documents Lack of project defining and financing sources availability due to strategy missing	Ensure that strategic documents are prepared on time in order not to have a few years gap between them Ensure that strategic documents are up to date in order to enable financing	one year before expiration of the actual strategy

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
		documents considering river transport and ports are under preparation.	projects from the inland navigation sector, projects that are of importance for the inland waterways and ports.		background of the specific projects	
HR / 1	**Mid-term Development Plan for Inland Waterways and Ports (MTDP)**	MTDP was valid in the period between 2009-2016. The document was adopted by the Croatian Parliament and it was the basis for inland waterways and ports projects generation and financing. New version of the MTDP is under preparation and should be done by the end of the 2022.	MTDP should be up to date all the time and adjustable in accordance with needs. It should foresee if some of the projects could not be realized in the future period of time and such projects should not be obstacle to other projects.	Avoid projects that are obstacle to one another or many other projects Mid term strategic documents should be adjustable to real needs	Define priority projects and try to define are any of those projects and their implementation uncertain and how (risk defining) Foresee the risks for each project/objective realization, measures to prevent them	2022
HR / 1	**National Program for the Railway Infrastructure for the Period 2016-2020**	National Program for the Railway Infrastructure for the Period 2016-2020 (Official Gazette 103/2015) (further: NPRI) is the basic document which defines development priorities, construction, modernization, renewal and maintenance	This Program should prepare the basis for the future railways modernization and construction. It should be in line with other transport strategies especially when project from different transport sectors are based	Overlap of the strategic projects from different transport sectors	To strictly define which project are priorities	2022

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
		of the railway infrastructure system. NPRI has been adopted in line with TDS.	partially or in total on the same location.			
HR / 2	**Planning and construction of the public roads in Republic of Croatia**	Planning and construction of the public roads in Republic of Croatia is regulated by the Road Law (Official Gazette 84/11, 22/13, 54/13, 148/13, 92/14, 110/19, 144/21) and it is implemented through three levels: long-term - TDS; mid-term: four year Program adopted by the Government and yearly: construction and maintenance plans that should be adopted by the companies which manage road networks.	To have efficient road infrastructure as connection to the port of Vukovar.	Long periods for significant road connections realization	To recognize the priorities and significance of specific projects which have the influence on multimodal chains	2022
HR / 2	**A Common Master Plan for the Eastern Countries**	Common Master plan is prepared for following Counties in the eastern part of Republic of Croatia: Virovitičko-Podravska, Osijek-Baranja,	To have a Master Plan that is a good basis for development and financing transport projects and infrastructure.	Wrong information regarding inland navigation sector	When preparing such documents consult authorities from each specific transport field for correct information	when new version is being prepared

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
		Brodsko-Posavska, Požeško-Slavonska and Vukovarsko-Srijemska County. Final version of the document is from 2020.				
RS / 1	**Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia 2008-2015** The primary objective is sustainable, well-functioning transport systems aiming to contribute to expanded, improved and safer transport networks, which will enhance transport services, attract new investments More efficient implementation of investments in development projects and more intensive development of multimodal transport;	Strategy is outdated Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia is not harmonized with national and international (EU) legal framework	Develop and adopt a new transport Strategy All types of transport models and infrastructure projects will be related Harmonization with national and international (EU) legal framework	Gap 1 Lack of coherent and relevant policy or strategy to guide the development of the transport sector in Serbia Gap 2 Insufficient integration between the individual transport modes Gap 3 Non harmonized national and international (EU) legal framework Gap 4 There is no concept of regional development and connection with trading partner countries	The Republic of Serbia needs to develop and adopt a new transport Strategy Form a cooperation committee, intersectoral coordination board or any other formal cooperation body in order to avoid any conflict of interests and to coordinate strategies and actions and acknowledge this need in relevant legislation Suitable framework must be established to take care of European tasks for traffic and transport Create a concept of regional development and connect with trading	2023

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	Faster integration of RS into the EU and fulfilment of conditions from the progress report of the European Commission for Serbia 2019				partner countries	
RS / 2	**Strategy on Development of Waterborne Transport of the Republic of Serbia for the period from 2015 to 2025** Increased volume of traffic on rivers and thus better utilisation of port transshipment capacities and rapid return of invested funds in the modernization of port infrastructure; Simplified administrative procedures, safe navigation without unnecessary delays; Final recognition of inland ports as	The strategy deals with the development of the economic potential of Serbian ports and the development of navigation standards for international and national inland waterways. Intensive development of water transport in RS from 2015 until today indicates the need to harmonize international and national IVV regulations, implement joint administrative procedures, recognise inland ports as transport network modes that have major roles as logistic centres of Serbia and intra-	Increase the traffic of local and foreign vessels (including transit, import and export) through the IWW network of Serbia; Harmonise international and national IWW regulations by implementing simplified administrative procedures (including border crossings), ensuring the safety of navigation through compliance with internationally applicable laws and standards by providing a network of IWW and ports of the	Gap 1 Lack of information on the availability of transhipment capacities in ports and insufficient information on the benefits of water transport; Gap 2 Lack of harmonized international and national IWW regulations by implementing simplified administrative procedures Gap 3 lack of awareness that inland ports are crucially important elements of transport network	Present and promote ports on inland waterways in the Republic of Serbia on international level and educate potential domestic economic entities; Organize experts from different transport models which make analysis to the relevant EU legal framework and give recommendations for harmonization of national IWW regulations by implementing simplified administrative procedures; Lobbying for interests of ports with relevant institutions of the EU, supported by various	2023

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	efficient and reliable transport network elements where not only various transport modes meet, but where value is added not just to cargo but to overall supply chains; Facilitation of the spatial concentration of port related activities, logistic activities and industrial activities wherever physically possible; Increase the uptake of innovations in traditionally novelty-reluctant inland ports for the purposes of increase of reliability and efficiency of planning and operations.	European and international supply chains. There is no development initiative on smart ports, more digitization and automation is needed in inland ports.	highest quality; Duly recognise Inland port as transport network modes that have major roles as logistic centres of Serbia and intra-European and international supply chains; Harvest the benefits of synergies between ports and logistic and/industrial zones by locating the latter within the existing port areas or in their immediate vicinity; Focus further port development initiative on smart ports and more digitization and automation of port management, port infrastructure and port operations.	Gap 4 Lack of intersectoral coordination and cooperation in port and spatial planning Gap 5 Lack of attention to automation in inland port operations	impact assessments and other supportive studies on inland ports Form a permanent body/commission/board of relevant decision-making organisations that will coordinate their activities and safeguard mutual interests in spatial planning and strategic economic/industrial planning in relevant transport strategies and policies; Establish an appropriate funding mechanism or adapt the existing ones so as to include and prioritise research and innovation activities in the automation of port operations and get involved in policy making processes.	

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
RS / 1	**National Program for public rail infrastructure** All river ports in RS to be connected to the national railway network; Develop and modernize railway infrastructure in ports;	In the National Railway Infrastructure Program, ports are not mentioned, regardless of the extremely great importance of the connection between the port and railway infrastructure. The National Railway Infrastructure Program does not take into account the forecasted increase of cargo volumes in Serbian ports, which may create bottlenecks	Ensure functional and operational coordination between development strategies for railway infrastructure and port strategy; Ensure sufficient capacity of rail links to river ports in the Republic of Serbia; Development plans for railway infrastructure will be focused on connecting ports to the railway network.	Gap 1 The Outdated National Program for the Development of Railway Infrastructure; Gap 2 Lack of intersectoral coordination between strategies in water and railway transport Gap 3 Lack of connections or rail infrastructures capacities in river ports in the Republic of Serbia	Republic of Serbia needs to develop and adopt a new National Program for the Development of Railway Infrastructure; Secure that inland ports are clearly identified and mentioned in the new regulation for railway transport. Get involved in the elaboration of the new transport strategies in the early phase and/or during the public consultations.	
BG / 1	**Integrated Transport Strategy for the period until 2020** To provide a plan for sustainable development of Bulgaria's transport system and a framework for investments in the sector; to define the country's contribution to the Single European	The strategy determines the infrastructure, organizational and operational measures required to achieve its strategic objectives through a list of concrete projects for investments in railway, road, water, and	The ITS should provide financial incentives in support of port development in several main directions: construction of new port infrastructure and modernization of the existing one; improvement of intermodality	Gap 1 (Level 1): Lack of investments in construction and development of river port facilities. Gap 2 (Level 1): Insufficient measures in support of road infrastructure in port areas Gap 3 (Level 2):	Actions to close gap 1: concrete measures for the development of facilities in the ports of Vidin and Silistra. Actions to close gap 2: modernization and development of the network of lower class roads in all regions along the Danube	Modernization and development of the network of lower class roads could be achieved in the short term (by the end of 2023). All other actions are to be implemented throughout the horizon of the strategy

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	Transport Area, including priorities for investments in primary and extended TEN-T network and in secondary connectivity.	intermodal transport.	and connectivity with local and transnational road and railroad networks; enhancement of digitalization and sustainability of ports.	Insufficient measures in support of railroad infrastructure and intermodality in port areas.	river and construction of the Ruse – Veliko Tarnovo motorway. Action to close gap 3: Construction of a railway connection with the town of Tutrakan.	(until 2030).
BG / 1	**Transport Connectivity programme 2021 – 2027** To determine Bulgaria's policies regarding the usage of EU budget for investments in improvement of the transport sector; to increase the effectiveness and competitiveness of the sector; to improve transport connectivity and access; to limit the negative effects on the environment and people's health, caused by transport sector development activities.	The programme determines five strategic priorities for the development of the transport system, including improvements in road and railroad infrastructure, intermodality, innovations and technical assistance. Each of them suggests concrete projects for investments.	The TCP should include projects for investments in port infrastructure rehabilitation and development; facilitation of ports' regional connectivity through improvements of road and railway connections; construction and modernization of intermodal terminals and digitalization.	Gap 1 (Level 3): Insufficient investments for the development of railroad infrastructure in river port areas. Gap 2 (Level 4): Insufficient investments for the development of road infrastructure in river port areas.	Actions to close gap 1: Modernization and rehabilitation of railway stations in port cities and of the rail lines Vidin – Sofia, Ruse – Gorna Oryahovitsa and Ruse – Varna. Actions to close gap 2: Rehabilitation of first, second and third class roads in the regions of Vidin, Montana and Vratsa.	Rehabilitation of first, second and third class roads in the regions of Vidin, Montana and Vratsa could be achieved in the short term (by the end of 2023). Modernization and rehabilitation of railway lines and stations should be considered for completion throughout the programming period (2021 – 2027).

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
RO / 2	**Government Programe 2021 - 2024** More focus on the maintenance of the IWT infrastructure	Maintenance works in port infrastructure and in the Danube fairway are not performed at a level in order which guarantee the high level of services provided by the private sector	Port infrastructure that ensures the safety of operation and high quality of services Fairway with minimum navigation depths all over the year	Plans for maintenance that are put in practice by the ports administrations. Plans for the maintenance to be put in practice	Action 1: elaboration of plans with responsibility and ensure the proper financing Action 2: Ensure the financing as requested, according to maintenance plans	Action 1: continuously Action 2: continuously
RO / 2	**The General Transport Master Plan** Development of naval transport infrastructure	The General Transport Master Plan list all the Romania ports as necessary to be improved	Prioritisation of investments related to ports development	Naval Transport Strategy	Action 1: Elaboration of the Naval Transport Strategy	Action 1: 2022 - 2023
RO / 1	Implementation of strategies through development projects	Strategies and financing sources identified	Resilient and efficient infrastructure	Implementation in time of infrastructure projects	Action 1: institutional capacity to be improved and stability in management and staff Action 2: improvement of the process of obtaining all necessary approvals Action 3: Contacting companies which are able to finalize the works in time	Action 1: continuously Action 2: applying Directive (EU) 2021/1187 ("Smart TEN-T") – 10.08.2023 Action 3: during the public procurement procedure for technical designs and works

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
EU / 1	**White Paper 2011: Roadmap to a single European transport area** • Final recognition of inland ports as efficient and reliable transport network elements where not only various transport modes meet, but where value is added not just to cargo but to overall supply chains. • Efficient usage of the scarce of space near waterways (coastal areas, river banks) through promotion of common user terminals rather than dedicated terminals. • Facilitation of the spatial concentration of port related activities, logistic activities and industrial	• White paper recognizes that only seaports have a major role as logistics centres and require efficient hinterland connections, while it recognizes the potential only in inland waterways, without referring to inland ports even implicitly. • Request for an improvement of market access to ports refers only to seaports. • White paper calls for the development of multimodal terminals at sea and inland ports, without mentioning activities related to attraction of logistic and/or industrial zones in or near port areas for the harvesting of synergies between transshipment, logistic	• Inland ports are duly recognized as transport network nodes that have major roles as logistic centres of intra-European and international supply chains; • Market access is improved for inland ports as well; • Initiatives to harvest the benefits of synergies between ports and logistic and/industrial zones by locating the latter within the existing port areas or in their immediate vicinity; Further port development initiatives should be more focused on smart ports and more digitization, automation and autonomation of port management, port infrastructure and port operations.	Gap 1: lack of awareness that inland ports are crucially important elements of transport network. Level: 1 Gap 2: lack of market access regulation for inland ports. Level: 2 Gap 3: lack of intersectoral coordination and cooperation in port and spatial planning. Level: 1	Lobbying for interests of ports with relevant institutions of EU, supported by various impact assessments and other supportive studies on inland ports. Get involved in the elaboration of the new transport policy/roadmap in the early phase and/or during the public consultations. Form permanent body/commission/board of relevant decision-making organizations that will coordinate their activities and safeguard mutual interests in spatial planning and strategic economic/industrial planning in relevant transport strategies and policies. Establish an appropriate funding mechanism or adapt the existing ones so as to include and	09/2022 – 12/2030 or until fulfilled.

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	activities wherever physically possible. Increase the uptake of innovations in traditionally novelty-reluctant inland ports for the purposes of increase of reliability and efficiency of planning and operations.	and production activities. White paper does not recognize the importance of further digitization and automation and autonomation of port operations neither in seaport nor in inland ports.			prioritize research and innovation activities in the automation of port operations and get involved in policy making processes.	
EU / 1	**Trans-European Transport Network Policy** • Secure the high priority in transport infrastructure development equal to land-based cross-border projects. • Recognition of inland ports as logistic hubs, trade gateways, industrial clusters and energy hubs. Recognition of inland ports as sustainable poly sectoral hubs where sustainable integration with other	• Inland ports are not recognized as cross-border projects. • Inland ports are not treated as cross-border multimodal nodes, trade gateways, industrial clusters and energy hubs. The role of inland ports is not recognized neither in inland waterway transportation nor in short-sea shipping routes, unlike seaports, where the need of their development, as well as their hinterland	• Secure the high priority in transport infrastructure development equal to land-based cross-border projects. • Recognition of inland ports as logistic hubs, trade gateways, industrial clusters and energy hubs. • Recognition of inland ports as sustainable poly sectoral hubs where sustainable integration with other modes is provided.	Lack of recognition of inland ports as cross-border sections of the transport network. Level: 1 Lack of recognition of inland ports as poly sectoral hubs of transport, industry, logistics and energy where sustainable production and cargo operations take place. Level: 1 Lack of focus on development of inland ports as decarbonization hubs. Level: 1	• Secure full recognition of inland ports as cross-border sections of the inland waterway transport network to obtain prioritization in transport infrastructure development. • Include inland ports in the new TEN-T policy as poly sectoral hubs, like for maritime ports, in an appropriate and unambiguous article of the new regulation.	09/2022 – 12/2030 or until fulfilled.

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	modes is provided.	connections is fully recognized and supported.			Secure clear mentioning of inland ports in the new regulation acknowledging the exact same role of inland ports in inland waterway transport and short sea shipping as maritime ports have in short sea shipping.	
EU	**Sustainable and Smart Mobility Strategy** • Achieved awareness of importance of inland ports as threefold green energy hubs – in supply, production and facilitation of green solutions. Secure significant financial means to inland ports so as to help them achieve and maintain the status of green hubs and engines of sustainable growth.	Inland ports are recognized as green energy hubs, only in terms of provision of alternative fuels or greening of port operations, and testbeds for waste reuse and the circular economy.	• Full recognition of inland ports as energy hubs not only in provision of green energy but also in production of green energy for vessels and own functioning. In order to achieve the full capacity of green energy hubs, inland ports should be incentivized for their transition efforts.	Gap 1: inland ports are not fully treated as facilitators, promoters and suppliers of clean energy solutions, sustainable transport and alternative fuels supply Level: 1 Gap 2: incentive schemes for greening of inland ports are scarce and insufficient. Level: 2	• Pursue full endorsement of inland ports, on policy and regulatory levels, as facilitators, promoters and suppliers of clean energy solutions, sustainable transport and alternative fuels supply. Analyse the regulatory framework for all types of similar incentives, existing and potential, design and propose different incentive schemes for different levels of greening activities in ports.	09/2022 – 12/2030 or until fulfilled.

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
EU / 2	**NAIADES III Action plan** • Funding the appropriate projects aiming at improving the quality of inland ports infrastructure. • Provide measurable compliance criteria for improving the quality of inland ports' infrastructure. • Contribute to the prevention of pollution from inland ships and provide guidelines for ships and ports for implementing the new legislative framework. Provide adequate funding schemes for inland projects contributing to the creation of "Smart inland waterway transport".	• Confusion around the statement of the Commission that it will give more support for projects aimed at improving the quality of inland ports infrastructure and their multimodal connections to rail, road and sea through dedicated terminals. • The "quality of inland ports infrastructure" is not defined and no KPIs measuring the level of quality are identified. • Time for common European inland waterways rules on preventing pollution from ships – an inland waterways version of MARPOL. • The initiative of creating "Smart inland waterway transport" appears to be	• "Dedicated terminals" are clearly defined while the focus of the Commission's support is set on the projects aimed at improving the quality of inland ports infrastructure and their multimodal connections to rail, road and sea. • Quality of inland port infrastructure is clearly defined along with the criteria of quality to be fulfilled and a set of tailor-made KPIs are identified for the measurement of the quality achievement. • Initiative is made for Europe wide inland waterways rules on preventing pollution from ships – an inland waterways version of MARPOL.	Gap 1: Priority in projects given to undefined "dedicated terminals". Level: 2 Gap 2: Quality of inland port infrastructure is not specified and no criteria and appropriate KPIs are identified to assess the quality of inland port infrastructure. Level: 1 Gap 3: No harmonized European inland waterways rules on preventing pollution from ships. Level: 3 Gap 4: Lack of recognition of inland ports' role in creating "Smart inland waterway transport" and adequate financial instruments or call topics. Level: 2	• Clearly define the term "dedicated terminals" to neutralize any ambiguous interpretations and misleading of potential project proponents. • Clearly define the quality of inland port infrastructure, the criteria for quality and design appropriate KPIs to measure the compliance of ports' infrastructure with the targeted quality criteria/levels. • Commence work on common regulatory framework for rules on prevention of pollution of inland waterways by ships. Secure full and unambiguous recognition of inland ports' role in creating "Smart inland waterway transport"	09/2022 – 12/2023

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
		focused on waterways and vessels and it apparently leaves inland ports out of the scope.	The role of inland ports in achieving "Smart inland waterway transport" is recognized and clearly defined, while "smartening" of inland ports is financially supported by relevant funding instruments of the EU.		and provide relevant funding instruments and schemes for appropriate project and initiatives.	
EU / 2	**The European Rail Network for Competitive Freight** • Avoidance of conflicting interests between different infrastructure managers. • Maintain the ports' rail infrastructure an integral part of the TEN-T rail network. Maintain the given level of charging autonomy for port authorities managing port's internal rail infrastructure and avoid inconsistencies in different regulations.	• Railway governance in European inland ports is extremely complex and diverse in terms of rail infrastructure development and maintenance, railway infrastructure charging, operation of rail related services and trains. • Due to the Directive 2012/34, Member States are allowed to exclude local railway infrastructures which do not have any strategic importance from the European legislation on rail infrastructur	• Cooperation between the national rail infrastructure manager and port authorities, whether the latter are managing the port rail infrastructure or not. • TEN-T Guidelines are the supreme regulation determining the port's importance and relevance in view of the EU legislation and TEN-T ports' railway infrastructure should be an integral part of the TEN-T rail network. • Principles of autonomous	Gap 1: lack of coordination between the national rail infrastructure managers and port authorities in terms of rail connections and port internal rail infrastructure and recognition of the need for such coordination in the Regulation. Level: 3 Gap 2: determined port rail infrastructure is in danger of being left out of the scope of EU legislation. Level: 2 Gap 3: Specific position of port rail infrastructur	• Form a cooperation committee, intersectoral coordination board or any other formal cooperation body in order to avoid any conflicting interests and to coordinate strategies and actions and acknowledge this need in relevant legislation. • Ensure that the port rail infrastructure remains an integral part of the TEN-T rail network and that it remains within the scope of EU legislation and thus preserve its importance.	09/2022 – 12/2023

Level & country	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
		e, which may hamper the interests of some port authorities (managing and/or operating port railways) to fulfill the overall greening of transport chains and to obtain funding for railway connections. Directive (EU) 2012/34 and Commission Implementing Regulation (EU) 2015/909 on infrastructure and service charges and calculation of costs do not recognize the specific situation of the port rail networks governed by port authority.	charging for ports laid down in the Port Services Regulation is respected by the Directive (EU) 2012/34, for railway infrastructure managed by port authorities.	e in terms of charging is not recognized Level: 1	Ensure that the autonomy of charging for port infrastructure, including the port's rail infrastructure is respected as laid out in Port Services Regulation (PSR).	

Table 3: Gap analysis summary for the Danube region

7 Conclusions

Analysis of national and European transport strategies demonstrated that significant gaps of various criticality levels for ports can still be found. Transport strategies cover all modes of transport and usually roads and railways are taken more into consideration than inland waterways and ports. Of course, the development of a port is in closed relation with the development of its roads and rail connection with the hinterland.

The Trans-European Transport Network [TEN-T][2] policy addresses the implementation and development of a Europe-wide network of railway lines, roads, inland waterways, maritime shipping routes, ports, airports and railroad terminals. The ultimate objective is to close gaps, remove bottlenecks and technical barriers, as well as to strengthen social, economic and territorial cohesion in the EU. TEN-T policy addresses to the neighbouring countries.

Besides the construction of new physical infrastructure, the TEN-T policy supports the application of innovation, new technologies and digital solutions to all modes of transport. The objective is improved use of infrastructure, reduced environmental impact of transport, enhanced energy efficiency and increased safety.

TEN-T policy also sets requirements that the transport infrastructure must comply with, including on safety, quality for highly performing transport and alignment with environmental objectives.

[2] Source: https://ec.europa.eu/transport/themes/infrastructure/ten-t_en

8 References

1. Austria's 2030 Mobility Master Plan

Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology:

https://www.bmk.gv.at/themen/mobilitaet/mobilitaetsmasterplan/mmp2030.html

Federal Chancellery:

https://www.bundeskanzleramt.gv.at/en/federal-chancellery/the-austrian-federal-government/government-documents.html (accessed: 15 Feb 2022)

2. RTI-Strategy Mobility – (Research, Technology, Innovation)

Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology:

https://www.bmk.gv.at/themen/innovation/publikationen/mobilitaet/fti_strategie_mobilitaet.html

https://mobilitaetderzukunft.at/de/highlights/FTI-Strategie-Mobilitaet.php

3. Danube Action Programme until 2022

Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology:

https://www.bmk.gv.at/themen/verkehr/wasser/schifffahrt/donau/publikationen/apd.html

4. Strategic plan for the development of transport in the Slovak Republic until 2030 - https://www.mindop.sk/ministerstvo-1/doprava-3/strategia/strategicky-plan-rozvoja-dopravy-sr-do-roku-2030

5. Program Statement of the Government of the Slovak Republic for 2021 – 2024 - https://www.nrsr.sk/web/Dynamic/DocumentPreview.aspx?DocID=494677

6. Water transport development concept of the Slovak republic - https://www.mindop.sk/ministerstvo-1/doprava-3/vodna-doprava/vnutrozemska-vodna-doprava/koncepcie/koncepcia-rozvoja-vodnej-dopravy-sr-aktualizacia

7. Ex Ante Consulting Ltd. (2019): *Országos Kikötőfejlesztési Főterv (National Port Development Master Plan)*

8. Ministry of National Economy, Transport Development Coordination Center (2014): *Nemzeti Közlekedési Infrastruktúra-fejlesztési Stratégia (National Transport Infrastructure Development Strategy) - chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://2015-2019.kormany.hu/download/3/a8/10000/Nemzeti%20K%C3%B6zleked%C3%A9si%20Infrastrukt%C3%BAra-fejleszt%C3%A9si%20Strat%C3%A9gia.pdf*

9. ProDuna-stratégia (2013): *Nemzeti dunai vízi közlekedési stratégiai terv (National Danube Water Transport Strategic Plan)*

10. Transport workgroup of the State Secretary of Planning Coordination under the Ministry of National Economy (2012): *Nemzeti Hajózási Stratégia (National Shipping Strategy)*

11. Szalma Botond (2010): *A magyar hajózás és a Duna Stratégia, valamint a Széchenyi terv (Hungarian Shipping and the Danube Strategy and the Széchenyi Plan)*. Publication of the Ministry for Foreign Affairs

12. Iparfejlesztési Közhasznú Nonprofit Kft (IFKA), Logisztikai Egyeztető Fórum (LEF) (2013): *Középtávú logisztikai stratégia 2014-2020 (Midterm Logistic Strategy 2014-2020)*

13. Budapest Fejlesztési Központ (BFK) (2020): *Budapesti Agglomerációs Vasúti Stratégia 2040 (Budapest Agglomeration Railway Strategy 2040)*

14. Croatia - Transport Development Strategy for the period 2017-2030 (Official Gazette 84/17)

15 Croatia - Government Program 2020-2024

16 Croatia - Ministry of Sea, Transport and Infrastructure Strategic Plan 2020-2022

17. Croatia - River Transport Development Strategy (Official Gazette 65/2008)

18. Croatia - Mid-term Development Plan for Inland Waterways and Ports 2009-2016

19 Croatia - National Program for the Railway Infrastructure for the Period 2016-2020 (Official Gazette 103/2015)

20 Croatia - Construction and Maintenance of Public Roads Program 2017-2020 (Official Gazette 47/2017)

21. Transport Master Plan of the East Croatia Functional Region

22. Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia 2008-2015 - https://www.putevi-srbije.rs/images/pdf/strategija/Strategijatransport_eng.pdf

23. Strategy on waterborne transport development of the Republic of Serbia, 2015-2025

24. Strategy on waterborne transport development of the Republic of Serbia, 2015 - 2025 (aul.gov.rs)

25. National Program for the Development of Railway Infrastructure 2017-2021
(*The Official Gazette of the Republic of Serbia*, No. 53/17),

26. Bulgaria - Integrated Transport Strategy for the period until 2030 - https://www.mtc.government.bg/en/category/42/integrated-transport-strategy-period-until-2030

27. Bulgaria - Transport Connectivity programme 2021 – 2027 – draft version (01.02.2021)

28. Bulgaria - Strategy for the Development of Road Infrastructure 2016 – 2022

29. Bulgaria - Programme for the Development and Exploitation of Railway Infrastructure 2019 – 2023

30. Bulgaria - National Development Programme BULGARIA 2030 - https://www.minfin.bg/en/1394

31. Bulgaria - Interreg VI-A Romania-Bulgaria Programme – extract of the draft version (August 2021)

32. Bulgaria - National Recovery and Resilience Plan of the Republic of Bulgaria – version 1.4 (15.10.2021) - https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/recovery-and-resilience-plan-bulgaria_en

33. Bulgaria - Strategy for Maritime Safety and Protection of the Environment from Ship-source Pollution

34. Bulgaria - Maritime Spatial Plan of the Republic of Bulgaria 2021 – 2035

35. Romanian Parliament Decision no. 42/2021 for granting the trust to the Government - https://gov.ro/ro/obiective/programul-de-guvernare-2021-2024

36. Romania - Government Decision no. 666/2016 approving General Transport Master Plan, modified through Government Decision no. 1312/2021; - https://onedrive.live.com/?authkey=%21AKorYXU2ldJZKAM&cid=849D1C715B5A454D&id=849D1C715B5A454D%21184401&parId=849D1C715B5A454D%21184096&action=locate

37. ROMANIA – National Plan for Recovery and Resilience (PNRR) - https://mfe.gov.ro/pnrr/

38. Notteboom, T., Pallis, A., & Rodrigue, J.P. (2022). *Port Economics, Management and Policy* (1st ed.). Routledge. https://doi.org/10.4324/9780429318184

39. European Union: European Commission (2011). *WHITE PAPER Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system*, COM/2011/0144 final, Brussels, 28.3.2011, available at https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52011DC0144, accessed 21.02.2022.

40. European Union: European Commission (2011). *Impact assessment, Accompanying document to the WHITE PAPER Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system*, COM(2011) 144 final, Brussels, 28.3.2011, available at https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SEC:2011:0358:FIN:EN:PDF, accessed 21.02.2022.

41. European Union: European Commission (2021). *Evaluation of the White Paper: Roadmap to a single European transport area-towards a competitive and resource efficient transport system*, March 2021, available at http://www.trt.it/wp/wp-content/uploads/2021/06/Final-report-Evaluation-of-2011-Transport-White-Paper.pdf, accessed 22.02.2022.

42. European Union: European Commission (2021). *Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Union guidelines for the development of the trans-European transport network, amending Regulation (EU) 2021/1153 and Regulation (EU) No 913/2010 and repealing Regulation (EU) 1315/2013*, COM/2021/812 final, Brussels, 14.12.2021, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021PC0812&from=EN, accessed 18.02.2022.

43. European Union: European Commission (2019). *COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS The European Green Deal*, COM/2019/640 final, Brussels, 11.12.2019, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1576150542719&uri=COM%3A2019%3A640%3AFIN, accessed 19.02.2022.

44. European Seaports Organisation (2018). *The Infrastructure Investment Needs and Financing Challenge of European Seaports*, Brussels, available at: https://www.espo.be/media/Port%20Investment%20Study%202018_FINAL_1.pdf, accessed 16.02.2022.

45. European Union: European Commission (2020). *COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS, Sustainable and Smart Mobility Strategy – putting European transport on track for the future*, COM(2020) 789 final, Brussels, 9.12.2020, available at: https://eur-lex.europa.eu/resource.html?uri=cellar:5e601657-3b06-11eb-b27b-01aa75ed71a1.0001.02/DOC_1&format=PDF, accessed 22.02.2022.

46. European Union: European Commission (2003). *Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity*, Brussels, 27.10.2003, available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32003L0096, accessed 21.02.2022.

47. European Union: European Commission (2021). *COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS NAIADES III: Boosting future-proof European inland waterway transport*, COM/2021/324 final, Brussels, 24.6.2021, available at https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2021:324:FIN, accessed 20.02.2022.

48. European Union: European Commission, Directorate-General for Mobility and Transport, Liere, R., Armbrecht, H., Turf, S., et al., (2018). *Good Navigation Status: guidelines towards achieving a Good Navigation Status*, Brussels, Publications Office, available at

https://op.europa.eu/en/publication-detail/-/publication/7980f36c-3eca-11e8-b5fe-01aa75ed71a1, accessed 20.02.2022.

49. European Union: European Parliament and the Council of the European Union (1992). *Council Directive 92/106/EEC of 7 December 1992 on the establishment of common rules for certain types of combined transport of goods between Member States*, Brussels, 7.12.1992, available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A01992L0106-20130701, accessed 23.02.2022.

50. European Union, European Commission (2010). *Regulation (EU) No 913/2010 of the European Parliament and of the Council of 22 September 2010 concerning a European rail network for competitive freight*, Brussels, 22.9.2010, available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02010R0913-20140101, accessed 24.02.2022.

51. European Union: European Parliament and the Council of the European Union (2012). *DIRECTIVE 2012/34/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 November 2012 establishing a single European railway area*, Brussels, 21.11.2012, available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012L0034&from=EN accessed on 23.02.2022.

52. European Union: European Parliament and the Council of the European Union (2017). *REGULATION (EU) 2017/352 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 February 2017 establishing a framework for the provision of port services and common rules on the financial transparency of ports*, Brussels 15.2.2017, available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02017R0352-20200528&from=EN, accessed 24.2.2022.

53. International Maritime Organization – IMO (1973). *International Convention for the Prevention of Pollution from Ships (MARPOL)*, London, available at http://library.arcticportal.org/1699/, accessed 23.02.2022.

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EUROPEAN UNION

Danube Transnational Programme

DIONYSUS

Integrating Danube Region into Smart & Sustainable Multi-modal & Intermodal Transport Chains

Analysis of European & National Transport Policies, Strategies & Programs with regard to the Danube Ports

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Table of Contents

Executive summary

The Austrian transport policy is predominantly determined by the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation, and Technology (BMK), which regulates and manages all national issues of transport. It also publishes programmes, strategies and plans regarding transport objectives and activities. This report analyses a selection of Austrian transport documents with regard to its impact on inland ports and identifies gaps that could be closed in order to improve their development.

One of the most recent and key documents is the 2030 Mobility Master Plan focussing on ways to achieve climate neutrality in the transport sector in 2040, whereby the mobility transition is seen as a multifaceted contribution to society. Another recent publication of the BMK, that was analysed is the RTI-Strategy Mobility, aiming at technical, social and organisational innovations in the field of mobility in order to achieve the committed European and national climate targets. The third analysed document is the Danube Action Programme by bmvit until 2022 (now: BMK), an integrative strategy for a balanced development of the multifaceted Danube.

The analysis shows that most common gaps are the lack of recognition of ports as crucial and significant aspects in the transport network. This is also shown in a lack of specific objectives or activities regarding their development, as well as an illustration their potential in the context of climate action, which is the key issue of the most recent documents.

1 Table of Tables

2 Abbreviations

Abbreviation	Explanation
EU	European Union
BMK	Federal Ministry Republic of Austria – Climate Action, Environment, Energy, Mobility, Innovation and Technology

3 Introduction

The Austrian ministry responsibe for transport policy is the Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology - until 2020 called Ministry for Transport, Innovation and Technology. The ministry regulates railways, waterways, motor vehicles, air traffic control, aviation safety, air weather services, public transport, telecommunications sector and the postal system.

A key document for the future development of the transort sector is *Austria's 2030 Mobility Master Plan* published by the Ministry in 2021. The overall objective of the plan is to achieve the defined vision for 2040 to have a climate-netural and social and economically viable mobility system, that meet the targets of the Paris Agreement on climate change in 2015.

Another policy document by the Ministry for Climate Protection is the *FTI-Strategie Mobilität* (RTI - Research, Technology and Innovation Strategy Mobility) published in 2020. Based on the guiding principle "avoid - shift - improve" of the Mobility Masterplan 2030, the strategy defined mission fields that form the content framework for measures to achieve climate neutrality by 2040. The RTI Mobility Strategy addresses the necessary system change in mobility in all its dimensions and is committed to the transformation of innovation ecosystems, the collaborative networks that link politics and administration, science, business and civil society.

The *Action Programme for the Austrian Danube until 2022*, published in 2015 by the Federal Ministry for Transport, Innovation and Technology (now Minstry for Climate Protection, ...) was defined as an integrative strategy for a well-balance development of the Danube, that reconciles objectives for navigation, ecology and flood protection.

4 Strategies with existing or potential influence on ports

Transport development strategies, policies and programmes identified to have substantial or more than marginal influence on ports are listed in the following table.

Economic development strategies, policies and programmes	Mentioning ports	Not mentioning ports, but could or should affect ports	Low influence on ports	Medium influence on ports	Strong influence on ports
Austria's 2030 Mobility Master Plan	-	x			x
RTI Strategy Mobility	-	x		x	
Danube Action Programme by Bmvit until 2022	x				x

Table 1: Listing of transport development strategies and their influence on ports

4.1 Austria's 2030 Mobility Master Plan

4.1.1 Current state

According to the overall government programme, Austria's 2030 Mobility Master Plan describes the long-term strategic direction of the mobility sector to fulfil the Paris Climate Agreement. It addresses the transformation drivers decarbonisation and digitalisation, while the focus lies on quality of life and competitiveness. To this end, new mobility concepts and innovations must be strengthened and new opportunities for experimentation must be created.

The overall goal of the Mobility Masterplan 2030 is to identify ways to achieve climate neutrality in the transport sector in 2040, whereby the mobility transition creates a manifold contribution to society. Thus, the Mobility Masterplan 2030 shall also contribute to improving access to mobility, transport safety, noise and air pollution control, resource requirements and recycling solutions, soil sealing and land use and biodiversity, health, value creation and labour market potential. The previous premises of Austrian transport policy - social, safe, environmentally friendly and efficient - still apply. However, due to the already observable changes in the climate framework conditions, climate policy actions are more urgent than ever. The Mobility Master Plan 2030 is the transport follow-up strategy of the Overall Transport Plan 2012 (Gesamtverkehrsplan 2021) and consistently directs the transport sector towards climate neutrality in 2040.

The central elements of the plan are summarised by three variables: Avoiding traffic, shifting traffic and improving the efficiency of each mode of transport.

In order to achieve this nationwide climate target, carbon emissions from transport need to be reduced from around 24 mln tCO_2 eq to close to zero by 2040.

With regards to freight transport, the plan suggests to reach this target by increasing cost transparency for differenent modes, which would in turn increase efficiency in transport chains, and by focussing on regionalism. It is underlined that related infrastructure decisions need to be made by 2030 and in cooperation with European partners. It is also stated that rail and inland waterways have a clear advantage regarding energy efficiency, but they need to more attractive and reliable for the market to embrace these advantages.

Economic development and the cost of freight transport must be decoupled. Assuming an economic growth rate of 40 per cent by the year 2040, the goal is for freight transport performance to increase only moderately by up to 10 percent.

Regarding shifting transport to rail and inland waterways, the plan aims to increase the share of rail freight transport from 31% (2018) to 40% (2040) and for IWW from 2% (2018) to 3% (2040). It is emphasised that this must be done primarily through appropriate European cooperation, as this is mainly a matter of cross-border transport.

The Plan states that rail freight transport and waterways are core components of a sustainable Austrian and European freight transport system due to their inherent advantages: mass transport capacity, environmental sustainability, safety, energy efficiency and resilience. In addition to punctuality, reliability and planning capacity, the speed of rail freight needs to continue to increase, primarily in international rail freight transport. Coupled with economic and energy efficiency, rail and inland navigation are to become primary components of climate-neutral supply chains by 2040. Shifting transport to inland waterways needs reliable and internationally harmonised infrastructure development (such as Good Navigation Status).

The 2030 Mobility Master Plan will be fleshed out for freight transport by the government's master plan for freight transport (not yet published[1]). This master plan will create the strategic framework for developing and designing rail freight transport in the coming years based on the main cornerstones of the 2030 Mobility Master Plan.

With regards to the objective of improving the system and making it efficient, the plan aims at 100% of inland vessels will beclome climate-neutral by 2040 (beside goals for other modes of transport). It is also noted that, Inland vessels and their motors have a long service life, which means that switching technologies on a large scale requires longer transition periods. Currently there are different approaches for zero-emission vessels, but the use of new technologies needs to be carefully coordinated, since vessels are used in cross-border transport. Refrence is also made to the usage of renewable fuels or hydrogen applications.

The role of inland ports in the transport system is not specifically addressed.

[1] Reference date: 02/2022

The plan also addresses aspects of the legal framework of the envisaged transition, as well as necessary economic instruments that create cost transparency and enable investments for the mobility transition.

Other soft instruments that are included in the plan are the importance of awareness-raising and mobility management, the social value added through climate protection, the role of Austria as pioneer in Europe, the governance structure and monitoring of the implementation of the plan, as well as new forms of dialogue and cooperation formats that includes the participation of a broad range of relevant actors.

With regards to inland ports it can be said that while waterways is considered as an important part of a sustainable (international) transport system, the role of inland ports in an intermodal transport structure is not specifically addressed. Ports are also not recognized as energy hubs with the potential to provide and produce green energy for vessels and own functioning.

4.1.2 Desired state

- Recognition of ports as central multimodal transport hubs that are crucial for increasing the share of inland waterways in freight transport.
- Reference to high potential of ports to provide and produce green energy for vessels as well as for own functioning.

Explanation:

Ports are crucial to improving the quality of inland waterway transport and thus increasing its share of freight traffic. They provide not only physical access to inland waterways and a connection to other modes of transport, but also host a number of logistic and industrial companies in their area. This spatial concentration of cargo and production can be seen as a benefit for both the port and industries. Ports are also potential sites for energy generation facilities, especially green energy producers such as photovoltaic parks, hydrogen generators, biofuel plants, etc., which are needed in order to achieve the goal of climate-neutral vessels. It is important to recognise their role in a multimodal transport system and encourage their modernisation and upgrade towards zero-emission goals.

4.1.3 Gap identification

Gap 1: Lack of recognition of inland ports as crucial aspects for improving inland waterway transport (level 1).

Gap 2: No reference to the role of ports in providing green energy to vessels (level 2).

Gap 3: Lack of recognition of ports for achieving climate-neutral supply chains (level 3).

4.1.4 Recommendations to close the gaps

Gap 1: Lack of recognition of inland ports as crucial aspects for improving inland waterway transport.

Recommendation: Recognition of ports as central multimodal transport hubs that are crucial for increasing the share of inland waterways in freight transport in the plan.

Implementation Strategy: Participation of relevant stakeholders in preparation/revision of Mobility Master Plan or not yet published master plan for freight transport.

Timeline: 09/2022 – 12/2030

Stakeholders: Ministry of Climate Action, ports, port experts

Gap 2: No reference to the role of ports in providing green energy to vessels.

Recommendation: Reference to the potential of ports as facilitators of clean energy and alternative fuel provision

Implementation Strategy: Participation of relevant stakeholders in preparation/revision of Mobility Master Plan or not yet published master plan for freight transport.

Timeline: 09/2022 – 12/2030

Stakeholders: Ministry of Climate Action, ports, port experts, alternative fuel industries

Gap 3: Lack of recognition of ports for achieving climate-neutral supply chains.

Recommendation: Underlining the benefits of ports regarding climate-neutral supply chains, due to the spatial concentration of ports, logistic and industrial activities (avoiding traffic), the role as trimodal (IWW, rail & road) hubs for intermodal transport activities, focussing on ports as decarbonisation hubs.

Implementation Strategy: Participation in preparation/revision of Mobility Master Plan or not yet published master plan for freight transport.

Timeline: 09/2022 – 12/2030

Stakeholders: Ministry of Climate Action, ports, logistic industries, alternative fuel industries

The following table summarizes the gaps identified in (*title of strategy*), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
1	Lack of recognition of inland ports as crucial aspects for improving inland	Recognition of ports as central multimodal transport hubs that are crucial for increasing the share of inland waterways in freight transport in the

	waterway transport	plan.
2	No reference to the role of ports in providing green energy to vessels	Reference to the potential of ports as facilitators of clean energy and alternative fuel provision
3	Lack of recognition of ports for achieving climate-neutral supply chains	Underlining the benefits of ports regarding climate-neutral supply chains

Table 2: Austria's 2030 Mobility Master Plan's gaps and actions to close them

4.2 RTI-Strategy Mobility – (Research, Technology, Innovation)

4.2.1 Current state

Published by the Ministry for Climate Action (BMK, former MoT) in 2020, the RTI-Strategy Mobility aims to enable technical, social and organisational innovations in the field of mobility in order to achieve the committed European and national climate targets. The objective is to contribute to a future-oriented, sustainable mobility system and to strengthen research and innovation in this key Austrian sector. In the context of the development of the new federal RTI-Strategy and the expiry of the national RTI programme "Mobility of the Future" (2012-2020) and the current EU research framework programme Horizon 2020, the RTI-Strategy Mobility sets the course for the future design of research, technology and innovation policy measures in the area of mobility and for supporting Austria's positioning in mobility-relevant thematic fields of the future EU research framework programme Horizon Europe.

With a focus on system solutions, the RTI strategy Mobility is not structured along individual technology fields or transport modes, but defines four mission fields. These mission fields form the content framework for the RTI policy measures as a contribution to achieving climate neutrality by 2040 in the sense of the guiding principle "avoid - shift - improve" of the Mobility Master Plan 2030.

Mission fields:

- Cities: Making urban mobility climate-neutral
- Regions: Mobilising and sustainably connecting rural areas
- Digitalisation: Operating infrastructure, mobility and logistics services efficiently and in a climate-friendly manner
- Technology: Develop environmentally compatible transport technologies

Measures:

The strategy defines measure, that should make it possible to advance the realisation of the four mission fields with an integrative consideration of gender and diversity aspects in all processes.

- RTI funding: Financial support for research, technology, and innovation on overarching fundamental issues of sustainable passenger and freight mobility in the context of the four mission fields is a significant cornerstone

- Experimental rooms: Complementing traditional RTI funding, it is foreseen to establish real-lab environments in Austrian RTI policy to try out and embed research and innovation projects in a real socio-technical context at an early stage.
- Alliances and implementation partnerships: Establishing transformative solutions in larger, regional mobility subsystems requires coordination, networking, and cooperation at and between multiple governance levels and mutual learning (legislation, executive, stakeholders)
- European and international positioning: The key societal challenges in the areas of mobility, transport and industry are addressed by targeted initiatives of the European Commission, especially with the Green Deal and Horizon Europe (support of Austrian actors in participation in the instruments of European RTI cooperation)

The strategy doesn't address ports in particular, but emphasises that in (international) freight transport, the integration of data and, based on this, the optimisation of processes along the supply chain and in the transport network offers great potential for the increased integration of environmentally friendly modes of transport such as rail or inland waterways and thus for the realisation of sustainable freight transport and transport logistics solutions.

It also envisages new integrated services, business and operator models in urban freight transport and urban transport logistics, especially with regard to the "first/last mile", but also the integration of alternative zero-emission vehicles and active mobility further represent an integrative part of this mission field.

4.2.2 Desired state

It is recognised that the strategy doesn't focus on single transport modes, but addresses a comprehensive approach with regard to mobility. Nevertheless future revisions of the strategy should include the importance and the potential role of ports in the transition of the transport sector towards climate neutrality:

- Recognition of ports as a central element of sustainable and multimodal urban transport logistics as efficient hubs connecting several modes of transport.
- Ports could be potential experimental spaces for testing innovation and research activities in terms of multimodal transport services, decarbonisation or digitalization processes

4.2.3 Gap identification

Gap 1: Lack of recognition of the role of inland ports for the increased integration of inland waterway transport (level 1).

Gap 2: Lack of recognition of inland ports for a climate-neutral urban logistics network (level 2).

Gap 3: No recognition of inland ports as experimental spaces for innovation and research activities (level 3).

4.2.4 Recommendations to close the gaps

Gap 1: Lack of recognition of the role of inland ports for the increased integration of inland waterway transport

Recommendation: Recognition of ports as central multimodal transport hubs that are crucial for increasing environmentally friendly transport modes, such as inland waterways.

Implementation Strategy: Participation of relevant stakeholders in preparation/revision of the strategy.

Timeline: 09/2022 – 12/2030

Stakeholders: Ministry of Climate Action, ports

Gap 2: Lack of recognition of inland ports for a climate-neutral urban logistics network

Recommendation: Emphasising the potential role of ports in the mission field in making urban mobility climate-neutral. Promoting the integration of ports into city logistics or ports as suppliers to the city, as well as enablers of green logistics

Implementation Strategy: Participation of relevant stakeholders in preparation/revision of the strategy.

Timeline: 09/2022 – 12/2030

Stakeholders: Ministry of Climate Action, ports

Gap 3: No recognition of inland ports as experimental spaces for innovation and research activities

Recommendation: Ports can be an ideal experimental space for innovation and research activities, as it combines different modes of transport, it is embedded in the urban logistics network and thus connects various stakeholders. Inland ports as key interface of international and regional transport routes can also connect international and national requirements and trends.

Implementation Strategy: Participation of relevant stakeholders in preparation/revision of the strategy.

Timeline: 09/2022 – 12/2030

Stakeholders: Ministry of Climate Action, ports

The following table summarizes the gaps identified in (*title of strategy*), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
1	Lack of recognition of the role of inland ports for the increased integration of inland waterway transport	Recognition of ports as central multimodal transport hubs that are crucial for increasing environmentally friendly transport modes, such as inland waterways
2	Lack of recognition of inland ports for a climate-neutral urban logistics network	Emphasising the potential role of ports in the mission field in making urban mobility climate-neutral
3	No recognition of inland ports as experimental spaces for innovation and research activities	Identifying the benefits of ports as experimental spaces for innovation and research activities, as they combine different modes of transport, they are embedded in the urban logistics network and thus connect various stakeholders and also act as key interface of international and regional transport

Table 3: Austria's RTI-Strategy Mobility gaps and actions to close them

4.3 Danube Action Programme by *bmvit* until 2022

4.3.1 Current state

The "Danube Action Programme of the bmvit until 2022" is an integrative strategy for a balanced development of the multifaceted Danube published by the Ministry of Transport and Infrastructure (now: Ministry for Climate Action - BMK) in 2015.

The strategy includes objectives for navigation as well as for ecology and flood protection. Thus, the action programme reflects the multifunctional character of the Danube and represents a tool to unite the not only closely interconnected and overlapping, but also partly contradictory interests of the sub-sectors. The Danube Action Programme enables the planning and implementation of measures that contribute to win-win solutions.

In addition to national initiatives, the co-organisation of supra-regional and pan-European activities is an important focus of the Danube Action Programme. Coordinated strategies and approaches of the Danube riparian states are necessary due to the transboundary character of the Danube.

Furthermore, the integrative approach of the action programme concerns the integration of the waterway into the overall transport system. The action programme aims to actively support the sustainable integration of Danube navigation into multimodal logistics chains. In this way it contributes to strengthening and securing Austria as a business location.

The main objective of the Danube Action Programme is to balance and coordinate the various interests in the fields of navigation, ecology and flood protection in order to promote the sustainable and safe development of the Danube as a living and economic area in Austria. Detailed impact goals were defined for the individual fields of action:

Navigation:

- Customer-oriented waterway management and improvement of the Danube navigation channel
- Increasing the competitiveness of Danube navigation in logistics networks
- Increasing traffic safety and safe lock operation

Ecology:

- Conservation and improvement of the Danube habitat
- Reduction of greenhouse gas emissions and increase of the environmental friendliness of the Danube navigation

Flood Protection:

- Ensuring flood protection and minimising damage when a flood disaster occurs

The following 23 measures have been identified to contribute to one or more of these objectives.:

1 Carry out waterway management in a customer-friendly and proactive manner
2 Eliminate nautical bottlenecks in an environmentally compatible manner
3 Improve and expand information on the navigation channel
4 Promote innovations in waterway management
5 Promote harmonisation of waterway management in the Danube region
6 Efficient lock maintenance
7 Improve the quality of moorings, riverside and towpaths
8 Continuously improve lock operation
9 Further develop River Information Services
10 Driving forward environmentally friendly fleet modernisation
11 Further develop transport on the Danube
12 Expand the range of multimodal transhipment facilities on the Danube
13 Improve educational opportunities
14 Anchor Danube navigation in European strategies
15 Provide information and expertise in a target group-oriented manner
16 Further develop shipping-related rules and regulations
17 Carry out renaturation measures in implementation of the Water Framework Directive
18 Support nature and species conservation within the framework of flood protection management
19 Implement marine litter management systems in a harmonised manner

20 Optimise organisational and transboundary flood protection management
21 Maintain, operate and further develop flood protection facilities
22 Optimise and operate flood operation management systems
23 Promote innovations in flood protection management

Objectives to be achieved by these measures:

With regards to inland navigation the measures should ensure stable fairway conditions in Austria and along the entire Danube, shortened waiting times for locks, up-to-date and easily accessible information, also to assist in the navigation of vessels, and an improved legal and political framework, help to optimise the degree of utilisation of the ships and to reduce transport costs.

Market potentials identified, support for fleet modernisation, improved riverbank infrastructure and the promotion of multimodal transhipment facilities directly benefit the economic operators and strengthen Austria as a business location. Up-to-date and easily accessible information enhanced nautical and logistical qualifications, and improved legal and political framework conditions also contribute to competitiveness.

Up-to-date and easily accessible information, also to assist in the navigation of vessels, improved lock operation, comprehensive nautical knowledge as well as an improved legal framework contribute to reducing the number of accidents and disasters and to improving transport safety in general.

The specific measure targeting the expansion of multimodal transhipment facilities (no. 12), recognises the importance of the upgrade of ports in order to increase the competitiveness of Danube navigation.

4.3.2 Desired state

- Stronger promotion of ports as facilitators and providers of alternative fuels and clean energy solutions in order to achieve the reduction of greenhouse gas emissions and increase of the environmental friendliness of Danube navigation
- Specification of expansion of multimodal transhipment facilities with regard to future requirements of ports (coordination with Mobility Master Plan 2030, not yet published Master Plan Freight Transport)

4.3.3 Gap identification

Gap 1: Lack of specific recognition of ports as providers of alternative fuels and producers of green energy solutions (level 1).

Gap 2: Lack of specification of expansion of multimodal transhipment facilities (level 2).

4.3.4 Recommendations to close the gaps

Gap 1: Lack of specific recognition of ports as providers of alternative fuels and producers of green energy solutions

Recommendation: In order to achieve the already set goal of reducing emissions and making Danube navigation more environmentally friendly, ports are to be recognised

as crucial actors. Ports can be both providers of alternative fuels and producers of green energy solutions (such as biofuel plants, photovoltaic parks, hydrogen producers)

Implementation Strategy: Participation of relevant stakeholders in preparation/revision of the action programme.

Timeline: 09/2022 – 12/2030

Stakeholders: Ministry of Climate Action, via donau, ports

Gap 2: Lack of specification of expansion of multimodal transhipment facilities

Recommendation: Specification of priorities of expansion of multimodal transhipment facilities in coordination with other relevant transport strategies/programmes (Mobility Master Plan 2030, Master Plan Freight Transport). Definition of specific objectives and requirements for ports with regard to climate goals.

Implementation Strategy: Participation of relevant stakeholders in preparation/revision of the action programme.

Timeline: 09/2022 – 12/2030

Stakeholders: Ministry of Climate Action, via donau, ports

The following table summarizes the gaps identified in (*title of strategy*), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
1	Lack of specific recognition of ports as providers of alternative fuels and producers of green energy solutions	Underlining and focussing on ports as crucial actors in the provision of alternative fuels for vessels and as producers of green energy (decarbonisation hub)
2	Lack of specification of expansion of multimodal transhipment facilities	Specification of priorities of expansion of multimodal transhipment facilities (coordination with other strategies, climate goals)

Table 4: Danube Action Programme until 2022's gaps and actions to close them

5 Gap analysis summary

5.1 Gaps, actions to close the gaps and strategy inputs

Below table summarizes the gaps and actions to close the identified gaps.

Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
Austria's 2030 Mobility Master Plan					
- Establishing ports as central multimodal transport hubs that are crucial for increasing the share of inland waterways in freight transport. - Development of ports to provider and produces of green energy for vessels as well as for own functioning	- Achieving climate neutrality in the transport sector in 2040 - It stated that rail and inland waterways have a clear advantage regarding energy efficiency, but they need to more attractive and reliable for the market to embrace these advantages - plan aims at 100% of inland vessels will become climate-neutral by 2040	- Recognition of ports as central multimodal transport hubs that are crucial for increasing the share of inland waterways in freight transport. - Reference to high potential of ports to provide and produce green energy for vessels as well as for own functioning	Gap 1: Lack of recognition of inland ports as crucial aspects for improving inland waterway transport (level 1). Gap 2: No reference to the role of ports in providing green energy to vessels (level 2). Gap 3: Lack of recognition of ports for achieving climate-neutral supply chains (level 3).	Action 1: Recognition of ports as central multimodal transport hubs that are crucial for increasing the share of inland waterways in freight transport in the plan Action 2: Reference to the potential of ports as facilitators of clean energy and alternative fuel provision Action 3: Underlining the benefits of ports regarding climate-neutral supply chains	Action 1: 09/2022 – 12/2030 Action 2: 09/2022 – 12/2030 Action 3: 09/2022 – 12/2030
RTI-Strategy Mobility					
- Recognition of the benefits of ports in the transition of the transport sector towards climate neutrality	- Cities: Making urban mobility climate-neutral - Regions: Mobilising and sustainably connecting rural areas - Digitalisation: Operating infrastructure, mobility and	- Recognition of ports as a central element of sustainable and multimodal urban transport logistics as efficient hubs connecting several modes of transport. - Ports could be potential	Gap 1: Lack of recognition of the role of inland ports for the increased integration of inland waterway transport (level 1). Gap 2: Lack of recognition of inland ports for a climate-	Action 1: Recognition of ports as central multimodal transport hubs that are crucial for increasing environmentally friendly transport modes, such as inland waterways.	Action 1-3: 09/2022 – 12/2030

Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	logistics services efficiently and in a climate-friendly manner - Technology: Develop environmentally compatible transport technologies	experimental spaces for testing innovation and research activities in terms of multimodal transport services, decarbonisation, or digitalization processes	neutral urban logistics network (level 2). Gap 3: No recognition of inland ports as experimental spaces for innovation and research activities (level 3).	Action 2: Emphasising the potential role of ports in the mission field in making urban mobility climate-neutral. Promoting the integration of ports into city logistics or ports as suppliers to the city, as well as enablers of green logistics Action 3: Ports can be an ideal experimental space for innovation and research activities, as it combines different modes of transport, it is embedded in the urban logistics network and thus connects various stakeholders. Inland ports as key interface of international and regional transport routes can also connect international and national requirements and trends.	
Danube Action Programme by bmvit until 2022					
- Promotion of ports as facilitators and providers of green energy solutions/alternative fuels - Specification of development	- Action programme defines measure to expand the range of multimodal transshipment facilities on the Danube	- Stronger promotion of ports as facilitators and providers of alternative fuels and clean energy solutions to achieve the reduction of	Gap 1: Lack of specific recognition of ports as providers of alternative fuels and producers of green energy solutions (level 1). Gap 2: Lack of specification of	Action 1: In order to achieve the already set goal of reducing emissions and making Danube navigation more environmentally friendly, ports are to be recognised as crucial actors. Ports can be	Action 1-3: 09/2022 – 12/2030

Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
direction of ports regarding climate goals	- Aims at reduction of greenhouse gas emissions and increase of the environmental friendliness of the Danube navigation - Aims at Increasing the competitiveness of Danube navigation in logistics networks	greenhouse gas emissions and increase of the environmental friendliness of Danube navigation - Specification of expansion of multimodal transshipment facilities regarding future requirements of ports (coordination with Mobility Master Plan 2030, not yet published Master Plan Freight Transport)	expansion of multimodal transhipment facilities (level 2).	both providers of alternative fuels and producers of green energy solutions (such as biofuel plants, photovoltaic parks, hydrogen producers) Action 2: Specification of priorities of expansion of multimodal transhipment facilities in coordination with other relevant transport strategies/programmes (Mobility Master Plan 2030, Master Plan Freight Transport). Definition of specific objectives and requirements for ports with regard to climate goals	

Table 5: Gap analysis summary for (Austria)

6 Conclusions

The analysis of Austrian transport strategies and plans shows certain gaps regarding the development of ports and its general recognition as part of the transport network. Nevertheless, it has to be noted that strengthening the condition of inland waterways and increasing its share in freight transport is defined as an objective in the most recent documents. However, no significant attention is paid to the role of ports and their potential to contribute to this shift. To be fair, it must be noted that the share of inland waterway freight transport is on a very low level compared to rail.

A specific master plan for freight transport has yet to be published according to the programme of the federal government. This should be based on the objectives of the 2030 Mobility Master Plan, which envisages a significant increase in the share of inland waterway transport and focuses on activities to achieve climate goals. In this context, it would be crucial to develop port-specific measures and targets, ideally with the involvement of relevant stakeholders, in order to establish the recognition and the potential of ports for a climate friendly transport sector.

7 References

Austria's 2030 Mobility Master Plan

Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology:

https://www.bmk.gv.at/themen/mobilitaet/mobilitaetsmasterplan/mmp2030.html (accessed: 15 Feb 2022)

Federal Chancellery:

https://www.bundeskanzleramt.gv.at/en/federal-chancellery/the-austrian-federal-government/government-documents.html (accessed: 15 Feb 2022)

RTI-Strategy Mobility – (Research, Technology, Innovation)

Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology:

https://www.bmk.gv.at/themen/innovation/publikationen/mobilitaet/fti_strategie_mobilitaet.html (accessed: 14 Feb 2022)

https://mobilitaetderzukunft.at/de/highlights/FTI-Strategie-Mobilitaet.php (accessed: 14 Feb 2022)

Danube Action Programme by bmvit until 2022

Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology:

https://www.bmk.gv.at/themen/verkehr/wasser/schifffahrt/donau/publikationen/apd.html (accessed: 14 Feb 2022)

Interreg
EUROPEAN UNION
Danube Transnational Programme
DIONYSUS

Integrating Danube Region into Smart & Sustainable Multi-modal & Intermodal Transport Chains

Analysis of European & National Transport Policies, Strategies & Programs with regard to the Danube Ports

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Table of Contents

Executive summary

This document serves as overview of Slovak national transport policies and strategies for the whole transport sector with special focus on those that are related or having impact on the water transport. Since Slovak republic has one principal strategical document "*Strategic plan for the development of transport in the Slovak Republic until 2030*" it served as principal source of information and base for this Country report. Secondarily "*Program Statement of the Government of the Slovak Republic for 2021 – 2024*" and *Water transport development concept of the Slovak republic were analysed*.

Country report is structured in the particular way to provide clear overview allowing comparison on the DIONYSUS project consortium level. Country report lists major strategical documents with brief introduction and then extracts relevant information and attributed to fit the structure adopted. Strategy / policy is relevant to the definition of problematic areas defined by strategical documents so it can be afterwards described in context and categorized. Base documents are designed to

- name the problem
- propose qualified solution

and

- define actions to be performed in order to mitigate or eliminate identified problem (objective).

All objectives were described as "desired state" and particular actions were defined. This design resulted in situation that some actions proposed fit to multiple goals.

1 Table of Figures

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3 Abbreviations

Abbreviation	Explanation
HSO	Horizontal Specific Objective
MSO	Modal specific objectives
MDPT SR	Today´s Ministry of transport and construction of the Slovak republic
VVC	Vážska vodná cesta (Váh waterway)

4 Introduction

In order to assure consistency in such complex topic as transport policy for categorized all transport modes:

- road transport
- rail transport
- public passenger local and regional transport
- water transport
- civil aviation

the Slovak republic by the respective ministry has adopted a common document *"Strategic plan for the development of transport in the Slovak Republic until 2030 (2016)"* that replaced all the previous strategic documents focused on modes separately. Water transport however is a specific case because along with abovementioned document there is "*Water transport development concept of the Slovak republic*" in existence. Since this concept was not designed to target the specific year, it stays valid. For the last time it was updated in 2004. This result in very unified policy that covers all strategies, identified bottlenecks and targets.

It is questionable to declare abovementioned documents as policies in terms of their internal structure. Their design is based on previously identified bottlenecks and problematic areas. These were analysed and set of hierarchical objectives and goals on multiple levels were defined. Task countdowns unfortunately are not available for public and serve as internal working documents.

Since transport topic is mentioned also in "*Program Statement of the Government of the Slovak Republic for 2021 – 2024" it should be mentioned in this deliverable as well.*

4.1 Program Statement of the Government of the Slovak Republic for 2021 – 2024[1]

Program statement focuses on transport as a sector that supports sustainable economic growth. The goal of the Government of the Slovak Republic is to fundamentally improve the care and maintenance of the existing railway and road infrastructure, after which the majority of transport services in Slovakia are carried out. Expenditures on maintenance and reconstruction of 1st class roads, bridges and the most used railway lines will increase. This will increase safety and traffic flow and reduce train delays. The Strategic Transport Development Plan of the Slovak Republic until 2030 will be revised.

The Government of the Slovak Republic will adhere to the following principles when implementing a transport policy aimed at an intelligent, integrated, green and sustainable transport system:

[1] https://www.nrsr.sk/web/Dynamic/DocumentPreview.aspx?DocID=494677

- decision-making based on data and social added value,
- state transport policy, which supports sustainable economic growth,
- strengthening the position of research and development and supporting innovation in the field of state transport policy,
- involvement of new financial instruments in the development of the potential of individual modes of transport,
- the introduction of integrated transport aimed at the use of environmentally friendly modes of transport,
- transport infrastructure that will generate space for new services, greater reliability and more flexibility in transport and the economy as a whole,
- creating better conditions for greater competitiveness of entrepreneurs in the transport and construction sector,
- effective institutional coordination of the state's transport and construction policy.

ROAD TRANSPORT

The Government of the Slovak Republic undertakes to continue the development of transport infrastructure and the completion of motorways and expressways, while paying special attention to the intensive and high-quality preparation of sections in the most congested corridors. The Government of the Slovak Republic will adhere to the binding prioritization of investment projects in the field of road infrastructure and update it regularly

Within the budgetary possibilities, the Government of the Slovak Republic will also contribute to the development of the regions by building by-passes of towns and municipalities and relocating 1st class roads, especially in sections with unsatisfactory technical, safety and capacity parameters. These projects are included in the prioritization project. The Government of the Slovak Republic has the ambition to address the current dual system of state road administration with the aim of optimizing activities in their operation and maintenance and streamlining the process of preparing investment projects in road infrastructure. As part of the National Strategic Plan and the subsequent Strategic Transport Development Plan until 2030, the Government of the Slovak Republic will prepare a project to merge the Národná diaľničná spoločnosť (National highway company) and the Slovenská správa ciest (Slovak Road Administration).

The Government of the Slovak Republic will analyse and assess the possibilities of a comprehensive solution for the property settlement of land under the transport infrastructure. Support for modern, innovative and efficient transport systems is one of the priorities of the Government of the Slovak Republic in the years 2020-2024.

Within the framework of sustainable mobility, the Government of the Slovak Republic will support the establishment of low-emission zones in order to increase air quality, especially in cities.

RAIL TRANSPORT

The Government of the Slovak Republic is aware that the share of rail freight transport in the total transport performance is very low, while the railway has the potential to increase this share and thus contribute in particular to reducing the environmental burden and increasing operational safety. The government will therefore promote the provision of sufficient capacity for the development of rail freight, set a sustainable toll strategy, improve combined transport conditions, support the development of freight bays and make freight transport more efficient.

The goal of the Government of the Slovak Republic is to streamline state railway companies with an emphasis on improving their management, increasing the quality of services provided and supporting the transfer of transport from roads to railways.

The goal of the Government of the Slovak Republic is to intensify the modernization of the main TEN-T corridors, which are in a high degree of preparation, including the main east-west line of Slovakia. The Government of the Slovak Republic will make a special effort to prioritize projects for the modernization of railway corridors, projects to significantly improve the permeability of railway infrastructure and to increase the share of electrified lines in order to achieve emission reductions.

Priorities will include supporting the growth of rail freight in the transport market. The government will strengthen Slovakia's international competitiveness by using its geographical potential as a transit country and will continue to work to exploit the transport potential between EU countries and Asia, especially by making better use of the capacity of existing lines and transhipment terminals, increasing, and modernizing it. The Government of the Slovak Republic will support measures aimed at higher participation of rail and water transport in the combined freight transport system. To this end, the government will make active efforts to support new combined rail freight lines or the construction of additional container terminals.

AIR TRANSPORT

In accordance with European transport policy and international commitments, the Government of the Slovak Republic will, as far as possible, financially support the activities performed by airport companies, which are the usual responsibility of the state. The Government of the Slovak Republic will continue to acquire a strategic partner for the development of M. R. Štefánik Airport in Bratislava with the aim of creating new investment and business opportunities. The Government of the Slovak Republic will examine the possibility of creating an airline base at one or more airports operated by airport companies. The Government of the Slovak Republic will support the modernization and construction of civil aviation infrastructure with the aim of economic development of the country also with regard to the introduction of new technologies (for example unmanned aerial vehicles). An important element will also be the maintenance and development of connectivity in order to minimize the impact of the consequences of COVID-19. The Government of the Slovak Republic has the ambition to optimize the system of airports operated by airport companies.

WATER TRANSPORT

In the coming years, water transport will focus on meeting the objectives of European inland waterway and port development policy, in particular the objectives of European Union (EU) transport policy through the implementation of the NAIADES III action program, planned for 2021-2027. to support inland waterway transport, which will address the better integration of inland waterways in urban, port, and digital policies and exploit its potential for cost-effective freight and passenger transport.

The Government of the Slovak Republic will support the modernization of inland waterways and public ports of the Slovak Republic, plans to restore the position of public ports in Slovakia as modern logistics centres on the international TEN - T Rhine - Danube corridor, implement European conditions and procedures for certifying professional qualifications in inland navigation, including the introduction of digitization in this area.

The development of water transport in the Slovak Republic fulfils one of the main pillars of the EU in the area of EU transport policy, which is the diversification of goods flows and the construction of transport corridors. The elaboration of a comprehensive concept of water transport development until 2030 with a view to 2050 will ensure the supplementation of the Strategic Transport Development Plan of the Slovak Republic until 2030 in the sector of water transport.

4.2 Strategic plan for the development of transport in the Slovak Republic until 2030 (2016)[2]

The strategic plan is a long-term strategic document, which aims to set an effective direction for the development of the transport sector and determines the manner of implementation of its development vision. It identifies key bottlenecks in transport infrastructure and in the sector of public passenger and non-motorized transport, as well as in the sector of transport operation, maintenance, and organization. Based on the problems and potential development factors identified in the analytical part, a target development vision with a horizon of 2030, strategic global goals, horizontal and modal specific goals and measures were defined in connection with European strategic and development documents.

The Strategic Transport Development Plan of the Slovak Republic until 2030 is based on the principle "from analysis to design", which was consistently applied during the entire process of its preparation. Within the preparation of this strategy - analytical and design part - the strategic transport model of the Slovak Republic was used. In this context, it is necessary to mention its significant added value represented mainly by the following outputs:

[2] https://www.mindop.sk/ministerstvo-1/doprava-3/strategia/strategicky-plan-rozvoja-dopravy-sr-do-roku-2030/strategicky-plan-rozvoja-dopravy-sr-do-roku-2030

- Identification of selected traffic problems
- Forecast of the future development of the economy and population of the Slovak Republic - based on it, the model determined, among other things, the future demand in individual transport modes
- By modelling selected measures

Based on the problems identified in the analytical part, a target development vision with a horizon of 2030 was defined in connection with European strategic and development documents.

The fulfilment of this vision is structured into several levels - global strategic goals, specific objectives, and measures. The global strategic goals are set in close accordance with European development policies and represent the societal benefits of implementing this strategy.

The specific objectives then reflect the current state of the transport sector and its problems. They set the direction of its further development, divided into horizontally specific objectives, which are common to all modes of transport, and modal objectives, which are specific to individual modes of transport.

The lowest strategic level of this document is the level of action. It is a set of activities that directly contribute to the fulfilment of the vision and goals of the transport sector of the Slovak Republic, while eliminating, resp. minimization of problems identified in the performed analyses.

The strategy itself is represented by the so-called strategic principles, which are formulated based on the synthesis of knowledge gained in the process of preparation of this material and indicate a clear direction of development of all areas of the transport sector of the Slovak Republic.

The last element is the implementation / financial plan, which must be created in connection with the set strategy and thus ensure its implementation. The success rate of the strategy will be monitored through indicators set for all global strategic and both types of specific objectives.

4.3 Water transport development concept of the Slovak republic (2000) updated version (2004)[3]

Water transport as part of intermodal transport systems plays an important role in national, but especially in international transport routes on the unified networks of European inland waterways and on the world's seas. Dynamizing element of the development of water transport is also the least of all modes of transport degrades the environment, as confirmed and initiated by regulations and directives European Community (EC) and European Union (EU) respectively.

The concept of water transport development is elaborated into five fundamental problematic ones

[3] https://www.mindop.sk/ministerstvo-1/doprava-3/vodna-doprava/vnutrozemska-vodna-doprava/koncepcie/koncepcia-rozvoja-vodnej-dopravy-sr

circuits:

I. Legislative, organizational and economic preconditions.
II. Development and modernization of transport infrastructure.
III. Ecological, safety and qualitative preconditions.
IV. Social preconditions.
V. Science and research, technical, information and international logistics prerequisites.

Concept has been adopted in 2000 and updated in 2004.

From the performed evaluation of the fulfilment of the tasks of the approved Concept after more than three years of its validity and in connection with the evaluation carried out in January 2003, it follows that the intentions set, and the duty does not need to be substantially amended. In 2003, overall positive results were achieved as in the legislative field, as well as in the development of individual tasks in the construction of waterways, mainly Váh waterway. In 2003, based on the activities of the Czech Republic, negotiations on the possibility began connection of South Moravia to the Danube. In carrying out the tasks of the Concept is effective cooperated with the Ministry of Agriculture of the Slovak Republic and the Ministry of the Environment of the Slovak Republic. Issues are being addressed in the border waters negotiations with the Czech Republic and Austria navigation and environmental impacts of the proposed flows, including proposed adjustments to achieve the desired navigation depths in critical places on the Danube. In accordance with Government Resolution no. 463/2002 on the construction of the Váh waterway was created an inter-ministerial commission for the preparation and elaboration of a construction development project VVC (Váh waterway) and its use. Its second meeting will take place this year and the main topic will be the area of financial security for the construction of waterways and port infrastructure of ports on these waterways.

5 Strategies with existing or potential influence on ports

Strategic plan for the development of transport in the Slovak Republic until 2030 is a strategic document of a long-term nature, which aims to set an effective direction for the development of the transport sector and determines the method of implementation of its development vision. This is output II. phase of preparation of the transport strategy of the Slovak Republic until 2030 and represents the actual fulfilment of the set ex ante conditionalities. Financing of development activities from European funds in the years 2016 - 2020 is therefore on this document / its approval by the EC, directly dependent.

Strategic plan defines

- **Vision**
  A sustainable integrated multimodal transport system that meets the economic, social, and environmental needs of society and contributes to the deeper integration and full integration of the Slovak Republic within the European Economic Area.
- **Global Strategic Goals (5)**
  - **GSG 1:** Ensuring equivalent accessibility of settlements and industrial zones supporting economic growth and social inclusion within all regions of the Slovak Republic (nationally and Europeanly) through non-discriminatory access to transport infrastructure and services.
  - **GSG 2:** Long-term sustainable development of the transport system of the Slovak Republic with an emphasis on the generation and efficient use of funds in relation to the real needs of users.
  - **GSG 3**: Increasing competitiveness in passenger and freight transport (counterparts of road transport) by setting appropriate operational, organizational, and infrastructural parameters leading to an effective integrated multimodal transport system supporting the economic and social needs of the Slovak Republic. Improving the quality of transport planning in the Slovak Republic by defining the optimal target value of the division of transport work in the conditions of the Slovak Republic and setting steps and tools to achieve it.
  - **GSG 4:** Increasing the safety and security of transport leading to the permanent provision of safe mobility through a secure infrastructure, introduction of new technologies / procedures using preventive and control mechanisms.
  - **GSG 5:** Reducing the negative environmental and negative socio-economic impacts of transport (including climate change) due to environmental monitoring, effective infrastructure planning / implementation and reducing the number of conventionally powered means of transport, resp. using alternative fuels.
- **Various categories of problems identified for each transport mode**
  For example: Road transportation → Planning issues → Unapproved and unapplied road network concept change
- Horizontal Specific Objectives (HSO)

- **HSO1**: Ensure preparation and conditions for systematic and conceptual development of transport in the SR
- **HSO2**: Improve the safety, efficiency and sustainability of transport operations through the strengthening of new technologies
- **HSO3**: Systematically reduce negative socio-economic and environmental impacts of transport
- **HSO4**: Systematically increase parameters of safety and safety protection of point and line elements of the transport system

- **Modal Specific Objectives (MSO)**
  - ROAD TRANSPORTATION
    - **MSO1**: Ensure accessibility of all regions of Slovakia through efficient and sustainable infrastructure
  - RAIL TRANSPORTATION
    - **MSO1**: Strengthen the role of railway as a carrying transport mode in a public transport system where it is justified
    - **MSO3**: Improving the quality and environmental impacts of railway operations
  - PUBLIC PASSENGER AND NON-MOTORIZED TRANSPORT
    - **MSO1**: Make attractive public and non-motor transport with social security everywhere and a natural choice for travel agencies
    - **MSO2**: Reorganize the institutional arrangement of public transport
    - **MSO3**: Territorially and technically integrate public transport in urban agglomerations and their surroundings and at the national level
    - **MSO4**: Ensure better conditions for cycling and pedestrian transport at local and regional level
  - WATER TRANSPORTATION
    - **MSO1**: Improve dangerous navigation conditions on the Danube, where provided as reasonable and implementable
    - **MSO2**: Improving the Slovak public ports system
    - **MSO3**: Determination of eligibility and conditions for development, modernization, and reconstruction of other monitored waterways in the Slovak republic
- **System measures**
- **Infrastructure measures**
- **Organizational measures**
- **Operational measures**

Water transport development concept of the Slovak republic is processed into five major problem circuits:

I. Legislative, organizational and economic preconditions.
II. Development and modernization of transport infrastructure.
III. Ecological, safety and qualitative preconditions.
IV. Social preconditions.
V. Science and research, technical, information and international logistics prerequisites.
VI. The conclusion of the Concept sets out the priority tasks for its fulfillment.

Transport development strategies, policies and programmes identified to have substantial or more than marginal influence on ports are listed in the following table.

Economic development strategies, policies and programmes	Mentioning ports	Not mentioning ports, but could or should affect ports	Low influence on ports	Medium influence on ports	Strong influence on ports
MSO1: Improve dangerous navigation conditions on the Danube were provided as reasonable and implementable		X			X
MSO2: Improving the Slovak public ports system	X				
MSO3: Determination of eligibility and conditions for development, modernization, and reconstruction of other monitored waterways in the Slovak republic			X		
Development and modernization of transport infrastructure	X				X

Table 1: Listing of transport development strategies and their influence on ports

5.1 MSO1: Improve navigation conditions on the Danube were provided as reasonable and implementable

Strategy identified in **Strategic plan for the development of transport in the Slovak Republic until 2030.**

The Danube, as a waterway of international importance, should ensure, according to the international classification of inland waterways, a certain transport performance, which is according to the criteria of the Danube Commission and the AGN (European Agreement on Main Inland Waterways of International Importance) min. 300 days a year. Improving the navigability of the Danube would also have a significant impact on greater and more efficient use of existing ports on the Danube in the Slovak Republic. While water transport has the potential to bring other modes of transport and can contribute to the reduction of emissions, noise and the like, the rules applicable to the Water Framework Directive, the protection of sensitive protected areas and Natura 2000 sites must be complied with.

5.1.1 Current state

Issues identified in Strategic plan for the development of transport in the Slovak

Republic until 2030:

- Insufficient navigation conditions on the Danube

The Danube is a waterway of international importance according to the international classification of inland waterways. In this context, the goal is to improve the navigability of the Danube and will have a significant impact on greater and more efficient use of existing ports on the Danube in Slovakia and will significantly strengthen the role of water transport in transporting goods over 300 km as a major mode of transport in the multimodal transport system.

While water transport has the potential to bring other modes of transport and can contribute to the reduction of emissions, noise and the like, the rules applicable to the Water Framework Directive, the protection of sensitive protected areas and Natura 2000 sites must be complied with.

- Almost permanent regime of operation of only one lock chamber at Gabčíkovo

In the section of the Danube Bratislava - Sap, the problem is, especially from the point of view of the flow of navigation, unplanned emergency repairs of the operating chamber during the long-term shutdown of the second navigation chamber due to a failure (maintenance) In 2010 - 2015, at least one of the locks was shut down almost constantly. These facts then adversely affect the crossing regime in the event of a breakdown or any accident in the case of the second lock (for exampla the accident in 2014, when damage to the upper gate of the right lock paralysed the navigation on the Danube for four days), leading to frequent protests against the Slovak Republic through international organizations.

5.1.2 Desired state

In order to tackle and eliminate identified issues, desired state may be described as achievement of the following:

- Implement technical measures to improve the navigability of the Danube waterway

The measure is focused on the implementation of technical measures to ensure the required parameters of the Danube waterway. The measure defines two priority measures and follow-up measures.

First priority measure is aimed at ensuring the required parameters of the Danube waterway fairway, such as the depth and width of the fairway, the radius of the curves, the underpass height under the bridges for the relevant waterway classification class. The individual technical measures will be implemented in connection with the results of the feasibility study, which will confirm the justification and feasibility of these measures.

The second priority measure is focused on the reconstruction and modernization of the locks of the Gabčíkovo waterworks due to their state of emergency.

Measures to improve the navigability of the Danube waterway will be addressed depending on the importance of the measure in relation to ensuring the required parameters of the fairway with regard to their importance and feasibility. Measures will focus on removing bottlenecks (fords and straits) depending on the bottlenecks that limit shipping. The implementation of the measures will also depend on their assessment by feasibility studies.

Related measures will be technical measures aimed at building parts of waterways (places for standing vessels in ports or at berths, berths, docks, or sidewalks, etc.).

The possible implementation of this measure should also follow the process agreed in the Joint Conclusions of the Strategic Environmental Assessment of the Gabčíkovo-Nagymaros Project. In the implementation of technical measures, there are so-called examples of good practice, which are defined e.g. within the PLATINA platform (Guide to good practice for sustainable waterway planning).

- Implement extended river information services

The measure is aimed at improving the use of river information services (RIS) in the context of increasing safety and developing communication and information infrastructure in water transport. The measure requires the introduction of ECDIS (Electronic Chart Display and Information System) on the Danube River. The implementation of RIS on other monitored waterways is conditioned by the results of feasibility studies concerning these watercourses, as well as the implementation of potential technical measures on these watercourses.

5.1.3 Gap identification

- Gap 1: Minimum level of investment in the development and modernization of waterway infrastructure and its components
  Level: 2
- Gap 2: Insufficiently completed parts of waterways
  Level: 2
- Gap 3: Inadequate operational condition of the Váh Waterway
  Level: 1

5.1.4 Recommendations to close the gaps

Gap 1: Minimum level of investment in the development and modernization of waterway infrastructure and its components

Action (recommendation to close the gap): Investments in the development and modernization of waterway infrastructure and their components have recently been made to a minimal extent, mainly due to insufficient financial resources and due to ambiguities regarding competencies in the field of waterway development and modernization.

Implementation strategy:

- Implement technical measures to improve the navigability of the Danube waterway
- Setting the principles of sustainable financing of the transport sector

- The process of preparation and implementation of development projects, including related activities

Timeline: 2030

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Ministry of transport and construction of Slovak republic in cooperation with project implementing bodies.

Gap 2: Insufficiently completed parts of waterways

Action: Implement technical measures to improve the navigability of the Danube waterway

- Setting the principles of sustainable financing of the transport sector
- The process of preparation and implementation of development projects, including related activities

Implementation strategy: Part of the waterway are considered to be the places where vessels stand in or out of ports, huts, locks, lanes, docks, port mooring facilities, bank fortifications, regulatory structures, signal signs, waterways, waterway protection zones, water parts, shore modifications and waterfront ports. However, the construction of only basic and necessary components has been solved in this area for a long time and it is necessary to complete it, also with connection to the consumption of electricity and drinking water where it is desirable and appropriate. Those parts of the waterways that are built should be reconstructed and a maintained access road provided.

Timeline: 2030

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Slovenský vodohospodársky podnik (Slovak water management enterprise), Vodohospodárska výstavba (Water management construction, state enterprise), Ministry of transport and construction of the Slovak republic.

Gap 3: Inadequate operational condition of the Váh waterway

Action (recommendation to close the gap): Increased cooperation between stakeholders

Implementation strategy: The Váh waterway was built from Madunice to Žilina. It is run along derivation canals designed also for navigation purposes, but due to its non-conceptual attitude it was completed only for energy and water management purposes and its energy levels are fitted with unfinished navigation chambers. As a result, only the upper gates of the locks are in operation, which are used only for the discharge of large waters, but not for the passage of vessels. Selice water level is not completed as well, due to lack of funds.

In the section Komárno - Hlohovec, the sections Komárno - Vodné dielo Selice remain unfinished, where due to the missing Nagymaros Waterworks in the section between Komárno and the Selice lock chamber there is considerable level fluctuations and

insufficient navigation depth, and the section Vodné dielo Kráľová - Hlohovec (Madunice). It is assumed that the necessary usability of the waterway will be achieved in these sections only through the completion of existing and missing waterworks. This would open up the possibility of alternative transport to industrial centers in adjacent areas. However, this assumption needs to be verified through feasibility studies as well as demand studies.

In the section Hlohovec - Žilina, conditions are created only for navigation in the navigation canals of the Váh cascade and on water reservoirs. The locks were only partially built and will need to be reconstructed and rebuilt. The lock chambers are not built at all on the Nosice and Hričov reservoirs and the Mikšová and Považská Bystrica stages.

Implementation strategy:

- Setting the principles of sustainable financing of the transport sector
- Periodic preparation of transport infrastructure maintenance plans
- The process of preparation and implementation of development projects, including related activities
- Completion and ongoing maintenance of databases of individual subsectors
- Regular updates of strategic and development documents

Timeline: ongoing - 2030

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Slovenský vodohospodárksy podnik (Slovak water management enterprise), Vodohospodárska výstavba (Water management construction, state enterprise), Ministry of transport and construction of the Slovak republic.

The following table summarizes the gaps identified in (*title of strategy*), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
2	Minimum level of investment in the development and modernization of waterway infrastructure and its components	Investments in the development and modernization of waterway infrastructure and their components have recently been made to a minimal extent, mainly due to insufficient financial resources and due to ambiguities regarding competencies in the field of waterway development and modernization.
2	Insufficiently completed parts of waterways	Part of the waterway are considered to be the places where vessels stand in or out of ports, huts, locks, lanes, docks, port mooring facilities, bank fortifications, regulatory structures, signal signs, waterways, waterway protection zones, water parts, shore modifications and waterfront ports. However,

		the construction of only basic and necessary components has been solved in this area for a long time and it is necessary to complete it, also with connection to the consumption of electricity and drinking water where it is desirable and appropriate. Those parts of the waterways that are built should be reconstructed and a maintained access road provided.
1	Inadequate operational condition of the Váh Waterway	· Setting the principles of sustainable financing of the transport sector · Periodic preparation of transport infrastructure maintenance plans · The process of preparation and implementation of development projects, including related activities · Completion and ongoing maintenance of databases of individual subsectors · Regular updates of strategic and development documents

Table 2: MSO1 strategy gaps and actions to close them

5.2 MSO2: Improving the Slovak public ports system

Despite the rich heritage of port industry in Slovakia, there is currently no clear and defined strategy for development of inland ports in the country. This acts a major constraint for planning and financing ideas and projects and consequently causes underfunding and economical and technical stagnation of inland ports.

Further development of inland ports must be based on key strategical documents elaborated with enough level of expertise reflecting particularities and specifics of covered areas. Documents must be available and accessible for relevant stakeholders, whether public or private. Elaboration of documents Master Plan Bratislava and Master Plan Komárno is a key for eligibility of other development projects. The main goal is to establish a framework for future development of public ports Bratislava and Komárno (cargo and passenger ports), to develop a business plan, marketing strategy and to define the future functionality of the port in the context of the international/national and regional/logistic chain.

Strategy identified in **Strategic plan for the development of transport in the Slovak Republic until 2030.** The aim is to improve the unsatisfactory technical and operational condition of public ports and related infrastructure for identified demand needs. Improving the technical and operational conditions of the public port system minimizes the negative impact of waterborne transport on the environment and human health by contributing to modal shift (especially in freight transport). Any infrastructure measures will have to comply with environmental legislation at both national and EU level.

5.2.1 Current state

Most transhipment technologies in the public ports of Bratislava and Komárno are at the end of their life cycle due to the minimal resources that have been invested in port facilities in recent decades in order to maintain their operability. As the whole superstructure is owned by a private operator, this agenda should be provided by him. The infrastructure of these ports, which does not meet the security and operational requirements for its optimal use, is in a similar state. In the passenger ports of Bratislava and Komárno, there is not a sufficient transport connection for cruise and cabin vessels. At the same time, these reasons have a significant negative impact on the very attractiveness of ports and the related demand for their services.

According to this strategy, it is planned to modernize two ports on the Danube River by 2030. Strategy has been prepared within the responsibility of (current) Ministry of transport and construction of the Slovak republic, implementer is port authority Verejné prístavy, a.s. (Public port, JSC). Modernization is to be assured by settlement on current ownership relations (in more details explained in 5.2.2. and direct development projects, such as Master plan II (2020) and Feasibility study for public port of Bratislava (in progress).

5.2.2 Desired state

In order to achieve desired state, two main measures have been identified (below). Desired state will support increase of cargo waterway transportation, will support market competition among port operators and respective service providers allowing ports to serve their purpose as logistics and industrial hubs.

1. Modernize public ports in Slovakia and ensure their subsequent regular maintenance

The measure is aimed at modernizing ports on the Danube River. By 2030, it is planned to modernize two ports on the Danube River. The measure is intended to achieve an increase in performance through water transport in the tendencies to create liberal business conditions and modernize the infrastructure of the ports on the Danube. The priority project is the modernization of the port of Bratislava. The modernization will focus on new investments in port infrastructure and superstructure, transhipment and transhipment facilities, including intermodal transport and enabling LNG-based inland waterway vessels, as well as new storage and handling technologies for new types of goods and new operators. in ports, including ensuring the disposal of waste from water transport operations by building collection yards and waste collection sites, thus achieving a harmonized waste disposal system for water transport operations within the framework of uniform European rules.

2. Settle property and administrative relations in public ports

The measure is primarily focused on the settlement of property relations in the port of Bratislava. The settlement is also one of the basic conditions for possible financing of the development of the port of Bratislava from EU resources. The long-term intention is to operate the port of Bratislava through a business model with several operators. The model assumes the ownership and management of infrastructure in the competence of one entity, the so-called the port operator, for example VPAS.

5.2.3 Gap identification

1. Gap 1: Modernization in progress, however not completed Level: 5
2. Gap 2: Property and administrative relations not yet settled Level: 5

5.2.4 Recommendations to close the gaps

Gap 1: Modernization in progress, however not completed

Such level of modernization as is necessary for public ports in Slovakia will require significant financial expenses. Since public ports in Bratislava and Komárno are TEN-T CNC ports, it is possible to apply for EC co-funding. Such co-funding requires detailed pre-project preparation in terms of strategy and feasibility. Strategic document was submitted in 2020, SEA procedure should be finalized by the end of 2021. In the same time the procurement for consultant that will elaborate next level of pre-project preparation, the Feasibility study is in progress and should be finalized by the end of January 2022.

Action (recommendation to close the gap): Continue in ongoing pre-project preparation

Implementation strategy:

- port authority VPAS (Public ports, JSC) will assure elaboration, approval and submission of Feasibility study as a base for further (physical) modernization.
- Timeline:
  Feasibility study should be finalized by the end of 2023. Further steps will be taken according to outcome of the study.
- Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions:
  Verejné prístavy, a.s., JASPERS, CINEA, Ministry of transport and construction of the SR, Ministry of environment of the SR.

Gap 2: Property and administrative relations not yet settled

- Action (recommendation to close the gap):
  Continue the ongoing negotiations with current major port operator using results of Feasibility study that, according to planned content should provide analysis on proper settlement of current ownership relations.
- Implementation strategy:
  port authority Verejné prístavy, a.s. (Public ports, JSC) will assure elaboration, approval and submission of Feasibility study and will continue with the negotiations.
- Timeline:
  Feasibility study should be finalized by the end of 2023. Further steps will be taken according to outcome of the study.
- Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions:
  Verejné prístavy, a.s., JASPERS, CINEA, Ministry of transport and construction of the SR, Slovenská plavba a prístavy, a.s.

The following table summarizes the gaps identified in (*title of strategy*), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
5	Modernization in progress, however not completed	Continue with initiated activities according to agreed schedule and actions
5	Property and administrative relations not yet settled	Continue with initiated activities according to agreed schedule and actions

Table 3: MSO2: Improving the Slovak public ports system - strategy gaps and actions to close them

5.3 MSO3: Determination of eligibility and conditions for development, modernization and reconstruction of other monitored waterways in the Slovak republic

This strategy, or better said goal has been identified in **Strategic plan for the development of transport in the Slovak Republic until 2030**.

Appropriate determination of justification and conditions will contribute in the future to the reduction of traffic jams, improve the safety of road freight transport, achieve greater energy savings and environmental protection.

5.3.1 Current state

Description of the current state would not give the proper information since this strategic objective is described too general. Please see 5.3.2 Desired state.

5.3.2 Desired state

Desired state may be defined as implementation of following three main measures identified:

1. To co-operate with the administrator of watercourses to ensure the maintenance of waterways and waterways on the monitored waterways of the Slovak Republic at the level of year-round navigability.

Ministry of the transport and construction of the SR will assist in ensuring operational measures associated with the management and maintenance of waterways in the SR and waterways on these waterways so as to ensure year-round navigability and ensure the required parameters of the waterway on waterways in accordance with the Declaration of Ministers of Transport on effective infrastructure maintenance waterway on the Danube and its navigable tributaries. Given the competencies given by the legal order of the Slovak Republic, this measure presupposes close cooperation with the watercourse administrator.

2. Implement technical measures to improve the navigability of the Danube waterway.

The measure is focused on the implementation of technical measures to ensure the required parameters of the Danube waterway. The measure defines two priority measures and follow-up measures.

The first priority measure is aimed at ensuring the required parameters of the Danube waterway fairway, such as the depth and width of the fairway, the radius of the curves, the underpass height under the bridges for the relevant waterway classification class. The individual technical measures will be implemented in connection with the results of the feasibility study, which will confirm the justification and feasibility of these measures.

The second priority measure is focused on the reconstruction and modernization of the locks of the Gabčíkovo waterworks due to their state of emergency.

Measures to improve the navigability of the Danube waterway will be addressed depending on the importance of the measure in relation to ensuring the required parameters of the fairway with regard to their importance and feasibility. Measures will be aimed at removing bottlenecks (fords and straits) depending on how the bottlenecks are limited to navigation. The implementation of the measures will also depend on their assessment by feasibility studies.

Related measures will be technical measures aimed at building parts of waterways (places for standing vessels in ports or at berths, berths, docks, or sidewalks, etc.).

The possible implementation of the the measure should also follow the process agreed in the Joint Conclusions of the Strategic Environmental Assessment of the Gabčíkovo-Nagymaros Project. In the implementation of technical measures, there are so-called examples of good practice, which are defined e.g. within the PLATINA platform (Guide to good practice for sustainable waterway planning).

3. Implement extended river information services

The measure is aimed at improving the use of river information services (RIS) in the context of increasing safety and developing communication and information infrastructure in water transport. The measure requires the introduction of ECDIS (Electronic Chart Display and Information System) on the Danube River. The implementation of RIS on other monitored waterways is conditioned by the results of feasibility studies concerning these watercourses, as well as the implementation of potential technical measures on these watercourses.

5.3.3 Gap identification

1. Gap 1: Unsatisfactory cooperation / communication between stakeholders
   Level: 3
2. Gap 2: Lack of monitoring
   Level: 3
3. Gap 3: Elimination of Gabčíkovo bottleneck
   Level: 5

5.3.4 Recommendations to close the gaps

Gap 1: Unsatisfactory cooperation / communication between stakeholders

Action (recommendation to close the gap): Increased cooperation between stakeholders

Implementation strategy: since respective measures are defined as improvement of procedure not tangible result, strategy may be implemented only by intensified cooperation with clearly defined goals.

Timeline: ongoing - 2030

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Slovenský vodohospodárksy podnik (Slovak water management enterprise), Vodohospodárska výstavba (Water management construction, state enterprise), Ministry of transport and construction of the Slovak republic.

Gap 2: Lack of monitoring

Action (recommendation to close the gap): Improved monitoring

Implementation strategy:

Slovak water management enterprise, a state-owned company, has acquired two vessels as part of the FAIRway Danube project funded by the Connecting Europe Facility (CEF) program. In the implementation contract for the project, the company undertook to carry out pilot operation of both vessels, focusing on critical sections of the Slovak part of the Danube waterway in order to optimize the fairway in accordance with the National Action Plans (NAPs).

- Measuring vessel MS Boat C 800

The vessel was delivered on 31.08.2018. Additionally (September 24, 2018) a multi-beam device was installed, which is used to survey and identify critical parts of the bottom. On June 21, 2019, the measuring vessel started the pilot operation.

- Katka demarcation vessel

The vessel was delivered on 30.03.2019 and put into operation on 15.08.2019. The aim of the pilot operation carried out by the KATKA vessel is to delineate the fairway in the already mentioned critical sections of the river.

Gap 3: Elimination of Gabčíkovo bottleneck

Action (recommendation to close the gap): Implementation strategy: The right lock of the Gabčíkovo Waterworks, which has been innovated and modernized since 2019, has been in sharp operation since 8.11.2021. WATER MANAGEMENT CONSTRUCTION, STATE ENTERPRISE (VV, š. P.), Together with the contractor, successfully completed the trial operation. After almost thirty years since the commissioning of the Gabčíkovo Waterworks, this is the most comprehensive modernization of locks to date. The works are carried out within the European project "Innovation and modernization of locks for increasing the safety and intensity of water transport at the Gabčíkovo Waterworks". In the coming weeks, the reconstruction works are scheduled to start in the left lock. Works on the project will continue in the left lock, with traffic due to be

redirected to the right lock only during the month of November. After the construction of the construction site in the left lock chamber, its gardening and the creation of the so-called dry dock, the construction activity will continue. Several components of the left lock chamber are already in production. VV employees, š. p., control directly in the production halls the production process itself, as well as the manufactured parts. The modernization of the left lock is planned with a realization time of 415 days.

Timeline: 12/2022

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: VODOHOSPODÁRSKA VÝSTAVBA, ŠTÁTNY PODNIK (Water management construction, state enterprise).

The following table summarizes the gaps identified in (title of strategy), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
3	Unsatisfactory cooperation / communication between stakeholders	Increased cooperation between stakeholders
3	Lack of monitoring	Improved monitoring
5	Elimination of Gabčíkovo bottleneck	Modernization of Gabčíkovo waterworks

Table 4: MSO3 strategy gaps and actions to close them

5.4 Development and modernization of transport infrastructure

trategy defined in **Water transport development concept of the Slovak republic** and is related to public ports. The basic precondition for fulfilling the goals in this area is the creation conditions for further construction of transport and port infrastructure. While port infrastructure with its internal structure, technical and technological diversity creates favorable conditions for the active involvement of business entities and thus private capital as well as the entry of other operators into port activities is building waterways significantly more demanding on financial resources, goes beyond one state, they have the nature of pan-European projects and, which is very complex, have the need to adjust flows, construction of water structures and partly also affect the environment (protected territory). According to Act no. 575/2001 Coll. on the organization of government activities and central organization State Administration, as amended, was the Ministry of Agriculture until 30 April 2003 The Slovak Republic is the central body of state administration also for water

management, within the competence of which it also includes the care of waterways, including their maintenance and the construction of new waterways. As of May 1, 2003, competencies for water management were transferred to the Ministry of the Environment SR. In connection with the mentioned change and implementation of fundamental directives and regulations of the EC Council on water protection and use, the Ministry of the Environment of the Slovak Republic is preparing a new wording of the Water Act, which will address the issue of the use of watercourses for navigation and should include fundamental issues related to the construction and maintenance of waterways. Despite of fundamental comments from the MDPT SR that these issues be included in the new wording of the law incorporated, the Ministry of the Environment of the Slovak Republic did not respond to these comments. In the next approval process, the MDPT SR will apply its requirements. At There is close cooperation in fulfilling the strategy and development of water transport in the Slovak Republic necessary in both departments. Slovak Republic Government Decree no. 528/2002 Coll. of 14 August 2002 binding part of the Concept of Territorial Development of Slovakia 2001. In terms of water transport are anchored in the binding part of the Váh waterway in the section Komárno - Sered' and the waterway Moravia in a study position in relation to the obligations of the Convention on Wetlands.

5.4.1 Current state

Public ports in Slovakia face many problems, such as the unsatisfactory technical and operational condition of port facilities, transshipment technologies, communications, engineering networks, warehouses and areas, mooring elements, stairway slopes and service walkways. Most transshipment technologies in the public ports of Bratislava and Komárno are at the end of their life cycle due to the fact that only minimal resources have been invested in port facilities in recent decades in order to maintain their operability. As the whole superstructure is owned by a private operator, this agenda should be provided by him. The infrastructure of these ports, which does not meet the security and operational requirements for its optimal use, is in a similar state. In the passenger ports of Bratislava and Komárno, there is not a sufficient transport connection for cruise and cabin vessels. At the same time, these reasons have a significant negative impact on the very attractiveness of ports and the related demand for their services. This strategy is directly linked to ***5.2 MSO2: Improving the Slovak public ports system***. To tackle unsatisfactory situation, there are multiple projects in progress. (Elaboration o Master Plan and Feasibility Studies for port of Bratislava, Elaboration of Master Plan and Feasibility Studies for port of Komárno, Waste management / Construction of the background for vessels in public port of Bratislava...) They are described in detail in DIONYSUS deliverable D.T1.1.3 Report on on-going and planned projects on the transport corridors in the DR.

5.4.2 Desired state

Since this strategy is directly linked to ***5.2 MSO2: Improving the Slovak public ports system*****,** desired state of this strategy is described in ***5.2.2 Desired state.***

5.4.3 Gap identification

1. Gap 1: Modernization in progress, however not completed Level: 5
2. Gap 2: Property and administrative relations not yet settled Level: 5

5.4.4 Recommendations to close the gaps

Since this strategy is directly linked to ***5.2 MSO2: Improving the Slovak public ports system*****,** recommendation to close the gap for this strategy are described in ***5.2.4 Recommendations to close the gaps.***

The following table summarizes the gaps identified in (*title of strategy*), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
5	Modernization in progress, however not completed	Continue with initiated activities according to agreed schedule and actions
5	Property and administrative relations not yet settled	Continue with initiated activities according to agreed schedule and actions

Table 5: MSO4 strategy gaps and actions to close them

6 Gap analysis summary

6.1 Gaps, actions to close the gaps and strategy inputs

Below table summarizes the gaps and actions to close the identified gaps.

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	MSO1: Improve navigation conditions on the Danube were provided as reasonable and implementable			Gap 1: Minimum level of investment in the development and modernization of waterway infrastructure and its components Gap 2: Insufficiently completed parts of waterways Gap 3: Inadequate operational condition of the Váh Waterway Level: 1	Action 1: Implement technical measures to improve the navigability of the Danube waterway Action 2: Setting the principles of sustainable financing of the transport sector Action 3: The process of preparation and implementation of development projects, including related activities	2030
	MSO2: Improving the Slovak public ports system			Gap 1: Modernization in progress, however not completed. Gap 2: Property and administrative relations not yet settled	Action 1: Continue with initiated activities according to agreed schedule and actions Action 2: Continue with initiated activities according to agreed schedule and actions	2023
	MSO3: Determination of eligibility and conditions for development, modernization and reconstruction of other			Gap 1: Unsatisfactory cooperation / communication between stakeholders Gap 2: Lack of monitoring	Action 1: Increased cooperation between stakeholders Action 2: Improved monitoring	Action 1: 2023 Action 2: 2021 Action 3: 2022

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	monitored waterways in the Slovak republic			Gap 3: Elimination of Gabčíkovo bottleneck	Action 3: Modernization of Gabčíkovo waterworks	
	Development and modernization of transport infrastructure			Gap 1: Modernization in progress, however not completed. Gap 2: Property and administrative relations not yet settled	Action 1: Continue with initiated activities according to agreed schedule and actions Action 2: Continue with initiated activities according to agreed schedule and actions	2023

Table 6: Gap analysis summary for Slovakia

7 Conclusions

From what has been described in this deliverable targets and goals set for water transportation are long-term character. Not only that results are expected to last for long time, but it also takes a long time to achieve them. They require cooperation of multiple public but also private stakeholders and systematic project approach. Since infrastructural projects are significantly expensive, only way how to apply for EU funding is precise pre-project preparation. This also takes a lot of time not only in terms of work itself but also the procurement and not negligible level of bureaucracy. Waterway infrastructure has been underfunded for decades what makes modernization even more challenging. However, there are multiple projects described either here or in other project deliverables that follow defined strategy.

8 References

1. Strategic plan for the development of transport in the Slovak Republic until 2030 https://www.mindop.sk/ministerstvo-1/doprava-3/strategia/strategicky-plan-rozvoja-dopravy-sr-do-roku-2030
2. Program Statement of the Government of the Slovak Republic for 2021 – 2024 https://www.nrsr.sk/web/Dynamic/DocumentPreview.aspx?DocID=494677
3. Water transport development concept of the Slovak republic https://www.mindop.sk/ministerstvo-1/doprava-3/vodna-doprava/vnutrozemska-vodna-doprava/koncepcie/koncepcia-rozvoja-vodnej-dopravy-sr-aktualizacia

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Integrating Danube Region into Smart & Sustainable Multi-modal & Intermodal Transport Chains

Analysis of European & National Transport Policies, Strategies & Programs with regard to the Danube Ports

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Table of Contents

Executive summary

This report summarizes main statements of strategies, plans and strategic documents on IWT, navigability of the Danube, inland ports on the Hungarian section.

The density of port network is adequate, so Hungary does not need to increase the number of ports, but the level of services provided.

In transport it is a serious mistake to think in 4-year election cycles. Anyone who invests in a ship or develops a port must think in at least 50-60 years ahead, and anyone who invest in the Danube, has to consider 200 years. The following challenges the sector (and the national economy) must face:

There is a huge increase in traffic between Europe and the Far East which will lead to an increase in traffic to the EU's eastern seaports.

By 2030 Danube inland ports become determinant and efficient multimodal hubs in their regional transport system to carry 10% of domestic cargo traffic on ecofriendly inland waterways.

To meet these goals, the followings must be considered:

An open, adaptable, dynamic economy based on competition and innovation, in which environmental protection plays a key role. This is reflected on the one hand, in the greater use of water transport, which is less polluting than other modes of transport, and on the other hand, in the replacement of technically obsolete and more greenhouse gas-emitting vehicles and the increased use of alternative fuels.

An equivalent task to increasing competitiveness is to ensure the preservation of natural and human values and resources, the conditions for sustainable growth, and the coordination of environmental and economic, national and EU objectives that may conflict with each other.

1 Table of Tables

2 Abbreviations

Abbreviation	Explanation
IWW	inland waterway
IWT	inland water transport

3 Introduction

The main documents – mentioning ports – analysed in this report are the National Port Development Master Plan, the National Transport Infrastructure Development Strategy, the National Danube Water Transport Strategic Plan, the National Shipping Strategy. All four were completed by or with an assignment from ministries and/or governmental bodies. In addition to these papers, the last document is an opinion article from an expert in shipping, port development, freight forwarding, transportation and economics. Botond Szalma, former president of MAHART wrote an article published by the Ministry for Foreign Affairs, titled: Hungarian shipping and the Danube Strategy and the Széchenyi Plan. Furthermore the other two strategic documents presented in this report – neither of them had connection with ports – are the Budapest Agglomeration Railway Strategy and the Mid-term Logistics Strategy.

4 Strategies with existing or potential influence on ports

Transport development strategies, policies and programmes identified to have substantial or more than marginal influence on ports are listed in the following table.

Economic development strategies, policies and programmes	Mentioning ports	Not mentioning ports, but could or should affect ports	Low influence on ports	Medium influence on ports	Strong influence on ports
National Master Plan (Országos Kikötőfejlesztési Főterv) 2019	X				X
National Transport Infrastructure Development Strategy (Nemzeti Közlekedési Infrastruktúra-fejlesztési Stratégia) 2014	X		X		
National Danube Water Transport Strategic Plan (Nemzeti dunai vízi közlekedési stratégiai terv) 2013	X		X		
National Shipping Strategy (Nemzeti Hajózási Stratégia) 2012	X			X	
Hungarian shipping and the Danube Strategy, and the Széchenyi Plan (A magyar hajózás és a Duna Stratégia, valamint a Széchenyi terv) 2010	X			X	
Budapest Agglomeration Railway Strategy (Budapesti Agglomerációs Vasúti Stratégia) 2020					
Mid-term Logistics Strategy (Középtávú Logisztikai Stratégia) 2013					

Table 1: Listing of transport development strategies and their influence on ports

4.1 National Port Development Master Plan (Országos Kikötőfejlesztési Főterv) 2019

The major goal of the National Port Development Master Plan is the to have an As-Is analyses and observation of development potentials of cargo ports on the Hungarian Danube section. In the framework of the Master Plan, detailed as-is analyses, thematic

feasibility studies, strategy and action plan have been completed. The purpose of the As-Is analyses of the document is to establish the Master Plan on strengthening Danube transport through the infrastructural development of TEN-T ports, with a special regard to the port of Komárom. The strategic document is financed via CEF. Both primer and secondary data were used when completing the situation analyses.

4.1.1 Current state

In recent decades, the Danube ports have undergone significant transformation from traditional inland ports to logistics hubs. In addition to their basic function of handling and warehousing goods, they now also offer logistics services, sorting, distributing products, and in some ports, various project-level logistics operations are provided. As an industrial production site and a collection and distribution centre for consignments, they fit into their regional economy, contributing to economic growth and job creation.

The number of Hungarian inland ports is 53, the number of which has not changed in recent years. The 3 national public ports (Baja, Csepel and Győr-Gönyű) and the public port of Dunaújváros, which handles a significant traffic, continue to dominate in Hungarian waterborne freight transport. The number of inland *public* ports is 38 and the number of operational ports is 28.

Inland ports in general have a capacity that exceeds current transport needs. Nevertheless, as the capacity of the ports is related to many other factors, further capacity development is needed in the Hungarian ports. All of the factors listed below can affect the actual capacity of a port and currently require some development or expansion everywhere:

Strategic objectives:

- Encourage mode change
- Generate additional demand
- Establishment of a financing system
- Human resource development
- Creating a sustainable regulatory environment

Areas of intervention:

- Education training
- Technological modernization
- Financing
- Investment promotion, industrial establishment
- Legislation, concepts
- Infrastructure development
- Career model
- Digitalization, automation
- Sustainability
- Market research, innovation

4.1.2 Desired state

By strengthening the role of inland ports, improving intermodal transport connections, volume and share of inland cargo traffic could be higher compared to other modes. As a result, transportation related environmental damage such as pollutant emissions, congestion could be decreased.

Vision

By 2030 Danube inland ports become determinant and efficient multimodal hubs in their regional transport system to carry 10% of domestic cargo traffic on ecofriendly inland waterways.

4.1.3 Gap identification

- Gap 2: Low utilization of port capacity Level: 1

Capacity level of the currently operating ports is 30%, which is way below the 60-70% EU average. Competitiveness of IWT and the utilisation of the standardized European water transport system is limited due to hectic waterlevel and lack of reliable navigational channel on Danube Recommendations to close the gaps

Encourage modal shift

The strategy calls for the goal of encouraging modal shift to be achieved by increasing the share of inland waterway cargo transport and integrating it into the combined intermodal transport system, divided into 6 sub-areas. The sub-areas are closely intertwined, considering all the elements needed to design the transport system.

Accessibility of ports

- In order to guarantee the connection to the combined / intermodal transport system, the strategy calls for the last kilometres of port connections to be accessible by road, rail and water.

Increasing efficiency of transhipment and storing

- Due to the growing share of inland waterway cargo transport, ports need to be prepared for the most efficient ways of handling goods. To this end, the strategy proposes to adapt to technological developments in the road, rail, pipeline and ship fleets, considering alternative propulsion options and storage and loading technology upgrades.

Digital port

- The strategy calls for the automation and digitalization of port processes, with the help of which the development of the National Port Information System and the connection to the unified international system is required.

Sustainable port

- As part of the adaptation of ports to climate change, the strategy will support preparedness to deal with extreme water and weather events.

Promotion of ports and waterborne freight

- To increase the share of IWT, the strategy proposes a targeted market information and promotion campaign.

Tracking freight trends

- To achieve and maintain a more favorable position in the transport market competition, the strategy encourages continuous and targeted market research and the monitoring of international developments in the logistics sector relevant to ports.
- *State aid scheme for IWT charges through inland ports.*

Generate additional demand

To generate additional demand, the strategy calls for additional demand for port services in two areas. To achieve this goal, the strategy urges the future development of market services according to the following components.

Market adaptation, industrial installation

- Adaptation of port services to the market through the expansion of the potential goods base (even with modal shift tolls) and the examination of transport solutions for compatible goods. In the context of market adaptation, the strategy also promotes cooperation with industry and port industrialization.

Service development

- Development of port services is supported by the strategy in two respects: including the inclusion and development of non-traditional port services and the development of ship repair and servicing activities.

Establishment of a financing system

To create the objective of the financing system, the strategy formulates four sub-areas, which, in addition to building on each other, are also preconditions for each other. The system to be established should be followed when assessing the order and importance of grants and investments.

Port ranking system

- The strategy clarifies in advance the concepts used in the ranking and thus also defines the types of ports.

Performance appraisal system

- The concepts clarified in advance by the strategy and the characteristics of the performance appraisal system make it possible to justify potential improvements.

Funding strategy

- Due to the clarification of concepts and the results of the performance appraisal system, the strategy sets out the criteria for a state aid scheme for port developments.

Human resource development

To achieve the objective of human resource development, the strategy urges to address the labor shortage in the port by involving three sub-areas.

Supply of shortages

- There is a significant shortage of manpower in the port profession, meaning that the strategy urges that this problem be resolved as soon as possible.

Wage development

- To make the port professions more attractive, the strategy supports the development of a wage development system.

Training program development

- To develop the human resources working in the ports, the strategy supports the development and extension of the existing training program to as many port jobs as possible.

Creating a sustainable regulatory environment

The strategy calls for action in three areas, as follows:

Clarification of authority

- By standardizing official tasks, procedural times will be shortened and made more efficient.

Rationalization of the regulatory system

- In reviewing the regulatory system, the strategy strongly supports the examination of potential toll reduction and border capacity.

Environmental sustainability of ports

- The strategy reconsiders the regulation of waste management and damage prevention activities.

The following table summarizes the gaps identified in the Master Plan, as well as recommended actions to close those gaps.

Gap 1: low utilization of port capacity

Action: Education training, Technological modernization, Financing, Investment promotion, industrial establishment, Legislation, concepts, Infrastructure development, Career model, Digitalization, automation, Sustainability, Market research, innovation

Implementation strategy: encourage modal shift, generate additional demand, establish a financing system, HR development, create a sustainable regulatory environment

Timeline: By 2030 Danube inland ports become determinant and efficient multimodal hubs in their regional transport system to carry 10% of domestic cargo traffic on ecofriendly inland waterways.

Participants: government level decision-makers, port owners, port operators, freight forwarding and logistics companies never or rarely using transhipping services provided by ports

Gap level	Gap	Action (recommendation) to close the gap
1	low utilization of port capacity	Education training, Technological modernization, Financing, Investment promotion, industrial establishment, Legislation, concepts, Infrastructure development, Career model, Digitalization, automation, Sustainability, Market research, innovation

Table 2: National Port Development Master Plan strategy gaps and actions to close them

In addition to tools detailed in **the strategy** presented above, the followings shall be mentioned

1) to encourage modal shift by digitalizing ports:
    a. Integrated Port Information System (KIR) was a project completed between 2017 and 2020. The project aimed to develop an integrated inland port ICT application to streamline administrative formalities through better use of information, communication and positioning technologies.
    b. Pannon RIS is the Hungarian River Information System that provides information to sailors on water level, fuelling, waste disposal, wifi access on map, fords and guts along the Hungarian Danube section
2) investing in human resources shall include the training of future experts. Port Operator Training was launched in 2016 with the cooperation of Ecotech Zrt, the Hungarian Federation of Danube Ports and the University of Dunaújváros.
    a. The aim of the training was to provide students a complex knowledge of port management that meets the professional requirements of the age. The 128-hour training consisted of 80 hours of theory and 48 hours of practice. The theoretical part can be acquired at the University of Dunaújváros, while the practical sessions were taken place at the ports of Dunaújváros, Csepel and Baja.

4.2 National Transport Infrastructure Development Strategy (Nemzeti Közlekedési Infrastruktúra-fejlesztési Stratégia) 2014

The National Transport Infrastructure Development Strategy was prepared as a result of extensive expert work and social consultation under the leadership of the Ministry of National Development and the Transport Development Coordination Centre. Covering the period 2014-2050 the major goal of the strategy is to increase Hungary's competitiveness as much as possible by efficiently serving economic processes.

There was also a practical reason for completing the strategy: the existence of a comprehensive sectoral strategy was a prerequisite for the EU adaptation of the Integrated Transport Development Operational Program (IKOP) for the seven-year EU planning period started in 2014. The essence of this was that the preconditions of the EU must have been met on the day of the submission of the 2014-2020 partnership agreement and the IKOP with a subsidy of HUF 1,034 billion. The crucial part of the conditions was the availability of the transport sector plan (strategy) adopted by the Government and certain content requirements for the strategy.

4.2.1 Current state

The strategy clearly says that in socially justified cases, where the benefits outweigh the costs, the railway and waterway transport should be encouraged. Separate working parts have been prepared for the development of some sub-areas, such as rail, water transport, energy efficiency, cycling, financing system.

In waterborne transport, the potential of passenger transport is constantly strengthening with the increasing constraints of the land network elements and the growth of tourism and solvent demand, so its development in both public transport and tourism is predictable, but it could not claim significant transport performance.

The modal split of transport is 3% in case of IWT.

The majority of the performance of freight transport is performed by rail and road. IWT mainly appears in international traffic. The volume of freight transport on water – 5-6 million tonnes per year and it exclusively means Danube ports – decreases in terms of loading and shows a slow increase in terms of unloading year by year. The destination countries in terms of goods transhipped in Hungary are mainly Austria, Germany, Romania, while in terms of imports: the Netherlands, Austria and Romania are the main senders.

The risks of waterborne freight transport are mainly due to the navigability of waterways embodied in capacity utiliztation. With the exception of icy and flood days in winter, the Danube can be navigated all year round, with a maximum reduced draft, and thus with no maximum utilization.[1]

Within IWT, there has been no significant change in navigability in the last decade. The Hungarian Danube section does not meet the navigability of the Danube as a Helsinki

[1] Nota bene: The unpredictability of the Danube waterway is a huge challenge for IWT sector and ports. In 2020, 60% of the year, vessels sailed on the Danube with a draft of less than 2 meters, losing 50-70% of the vessels' space capacity. (Source: HFIP)

corridor with a draft capacity of 1,300-1,600 tons with a draft of 2.5 m, as the vessels can only operate with a navigational restriction during part of the year, depending on the water regime.

Thus, ensuring the navigability of the Danube, as a Helsinki corridor, in accordance with the principles of sustainable development remains an important task.

Due to the high density of the network and the differentiation of the size of the fleet, the flexibility of road freight transport cannot be reached by other modes of transport.

The network and junction density and technical conditions of rail, IWW and air cargo transport limit their flexibility. In addition, in most cases, they are unable to provide a service without road loading and unloading functions.

The maintenance and investment costs of the water transport network totaled HUF 276 million in 2012, of which the Danube was HUF 140 million per year.

4.2.2 Desired state

Based on the objectives of the Strategy, an equivalent task to increasing competitiveness is to ensure the preservation of natural and human values and resources, the conditions for sustainable growth, and the coordination of environmental and economic, national and EU objectives that may conflict with each other.

The objectives of the Strategy identify the **social goals** as follows (the objectives that are in line with the support of IWT are in details):

- Reduction of negative impacts on the environment, enforcement of climate protection aspects: This is partly aimed at achieving improvements in the condition of the environment and environmental elements. The other major area covered is the sustainable management of natural resources. It is also important to reduce the use of non-renewable energy sources and raw materials. Promoting the efficiency and growth of the economy
- Improvement of health and property safety (significant reduction of accident victims)
- Improvement of employment
- Improving the well-being and mobility conditions of the population
- Reduction of territorual inequalities
- Improving social justice
- Strengthening international relations

To achieve the social goals, the main transport objectives are as follows:

- Creating a more useful transport structure at the societal level. Within passenger and freight transport, socially more beneficial segments and modes shall be strengthened.
- Strengthening resource-efficient modes of transport: From a social perspective more useful modes of transport should be identified through careful analysis specific functional areas. Development and promotion of non-motorized transport is absolutely necessary. Where the benefits outweigh the costs, rail and water transport shall be encouraged.

- Strengthening better passenger and freight transport at the societal level: First and foremost in passenger transport it means the preference and development of public transport ahead of any other modes. Modification of the transport structure in the field of freight transport, the aim is to maintain and increase transit traffic.
- Increase the quality and efficiency of transport services
- Improving transportation services
- Repair of physical components

Tools recommended to develop:

Development of the parameters of ports on the TEN-T water network to the core network level, modernization of cargo vessels.

Development of the ports belonging to the TEN-T water network, construction of their missing elements, modernization of cargo vessels.

Multimodal development and further development of TEN-T ports, together with related information services to achieve a more favorable modal split by effectively connecting the different modes of transport.

Improving the parameters of ports not included in the TEN-T water network to the core network level to replace the missing background infrastructure, modernization of cargo vessels.

Adequate quality, utilization and expansion of the supply in the field of IWT, in order to increase traffic, by the development of ports.

In parallel with the development of ports, the replacement and modernization of the fleet are necessary for the increase of the service level of freight transport.

Development tools for preparation:

Development of the parameters of ports on the TEN-T water network to the core network level

The improvement of the navigation parameters of the Danube as an international waterway is important at international level too, which can help increase IWT. To increase the number of navigable days with regard to natural environment, and to develop the port infrastructure on a demand basis by enforcing water protection and ecological aspects.

Development and establishment of mooring points for passenger change, establishment of connections between shipping lanes, modernization of passenger ships.

The new passenger port points, the arrangement and modernization of the current conditions, the construction of shore connections between the shipping services, including the provision of appropriate transfer would provide an expanded opportunity for hotel vessels and cruise shipping, improving the cityscape. In the vicinity of large cities, the possibility of new combined travel for transport traffic would reduce the load on urban roads and improve accessibility on the water. By preserving and strengthening the role of ferry service in regional public transport, facilitating the modernization of equipment, and establishing new ferry crossings, bypass contraints

can be avoided. The modernization of the necessary replacement of the fleet will lead to an increasee in the quality of passenger transport services.

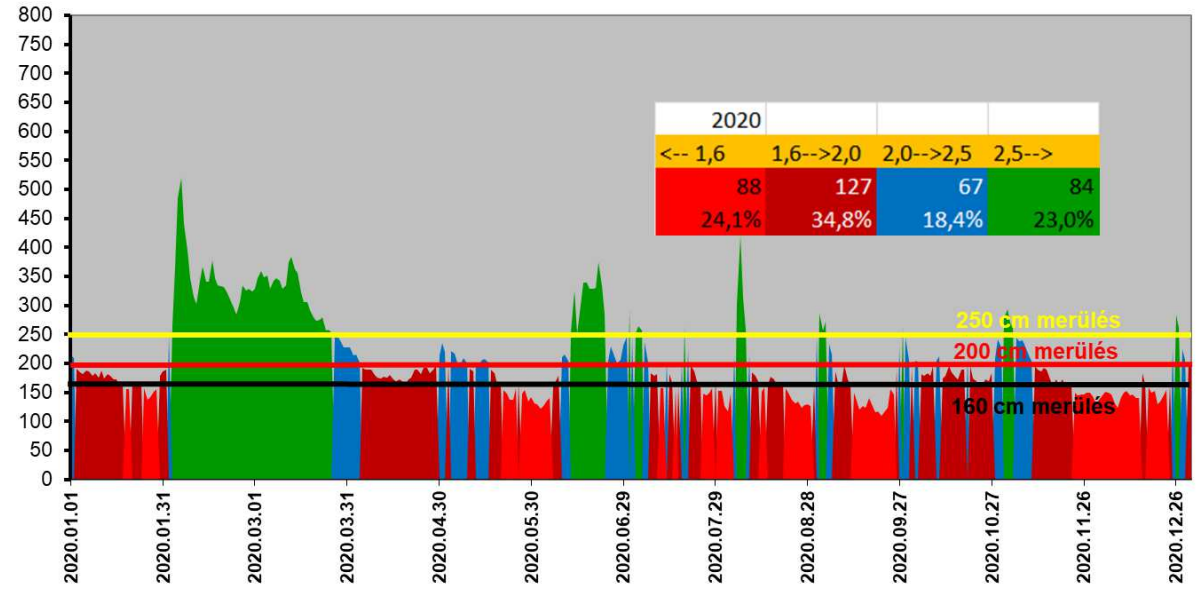
4.2.3 Gap identification

- Gap 1: low-level navigation conditions on the Danube Level: 1

The risks of IWT are mainly due to the navigability of waterways thus embodied in the capacity utilization. The Danube can be navigated all year round except in icy and flood days in winter, maybe with reduced draught and thus no maximum capacity.

Within IWT, there has been no significant change in navigability in the last decade. The Hungarian Danube section does not meet the navigability of the Danube as a Helsinki corridor with a draft capacity of 1,300-1,600 tons with a draft of 2.5 m, as the vessels can only operate with a draft restriction during part of the year, depending on the water regime. Thus, ensuring the navigability of the Danube, as a Helsinki corridor, in accordance with the principles of sustainable development remains an important task.

1. Figure Navigability of the Danube



Source: HFIP

Due to the high density of the network and the differentiation of the size of the vehicle fleet, the flexibility of road freight transport cannot be reached by other modes.

The network and junction density and technical conditions of rail, IWW and air cargo transport limit their flexibility. In addition, in most cases, they are unable to provide a service without road transhipping functions.

Part of the IWW fleet represents the technical standards of the 1950s and 1970s, and a smaller part represents the technology of the 1980s and 1990s. Carriers are increasingly acquiring second-hand cargo ships. The number of newly built, state-of-the-art ships is low. The main corridor in IWT is the Danube, on which, in addition to

the transport of goods, passenger transport for leisure and commuting purposes also appeared.

In Hungary, commercial shipping can only use natural waterways, therefore the network of waterways – in the absence of connecting elements – is essentially not a network per se. On the smaller rivers and on the larger lakes (Balaton, Velence, Tisza), leisure passenger transport and shipping are currently taking place. In the field of IWT, in addition to the obsolescence of the vehicle fleet, the lack of ports of adequate quality and service (combined freight) is a challenge.

The navigability of the Danube is limited, it cannot be used as a freight corridor throughout the year. The share of road transport is growing steadily for high-value and fast-moving shipments. In Hungary, rail and water freight cannot compete with road transport, and its market segment is mainly limited to high-volume, high-demand goods. Their amount is constantly decreasing. It is also typical of these chapters that there are no excessive demands on the carrier in terms of travel times.

4.2.4 Recommendations to close the gaps

- Gap 1: low-level navigation conditions on the Danube Level: 1

Long-distance, international road traffic can be diverted to rail and waterways, only if the cost levels of the latter modes over the entire supply chain, the reliability, delivery time and flexibility of the service chain approach the road. Ro-La transport could be a good solution. This could be greatly facilitated by the signing of an agreement between Ukraine and Hungary on the promotion of intermodal transport, which is already being prepared. However, as no breakthrough has been achieved in the field for years, no substantial change is expected in the coming years. Another question is how much of this mode of transport will remain in the EU countries and how well the countries will react to each relationship.

The development trend of water freight transport may be similar to that of the railway, to which the state can contribute by eliminating the bottlenecks of the Danube, i.e. by providing the infrastructure and creating healthy cost-sharing ratios.

Water infrastructure:

Cost-effective operation by developing a support system and program that takes into account the specific characteristics of the sector, by clarifying the related regulatory environment.

The development of ports will make it possible to maintain or slightly increase the position of water transport.

Increase the size of port areas with infrastructure for multimodality by 8,000 m2 in 2030 and 15,000 m2 in 2050

Increase the length of water infrastructure equipped with intelligent transport system to 378 km in 2030.

Develoment tool with high utility and limited implementation, proposed implementation:

- Development of the parameters of the TEN-T ports to the level of the core network
- modernization of cargo ships

Development tool for preparation:

- Development of the parameters of the TEN-T water network, the Danube to the core network level
- development and establishment of passenger mooring points,
- establishment of coastal connections for shipping services

Modernization of passenger ships founding sectoral sub-strategy analysis:

- examining the possibilities for the development of water transport

Action:

- Ro-La transport
- Increase the size of port areas with infrastructure for multimodality by 8,000 m2 in 2030 and 15,000 m2 in 2050
- Increase the length of water infrastructure equipped with intelligent transport system to 378 km in 2030.

Implementation strategy:

- Cost-effective operation by developing a support system and program that takes into account the specific characteristics of the sector, by clarifying the related regulatory environment.
- The development of ports will make it possible to maintain or slightly increase the position of water transport.
- Development of the parameters of the TEN-T ports to the level of the core network
- Modernization of cargo ships.

Timeline: 2050

Participants: government level decision-makers, freight forwarding companies with cargo on the Danube, port owners and port operators

The following table summarizes the gaps identified in the *National Transport Infrastructure Development Strategy*, as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
1	low-level navigation conditions on the Danube	Ro-La transport Increase the size of port areas with infrastructure for multimodality by 8,000 m2 in 2030 and 15,000 m2 in 2050. Increase the length of water infrastructure equipped with intelligent transport system to 378 km in 2030.

Table 3: National Transport Infrastructure Development Strategy gaps and actions to close them

4.3 National Danube Water Transport Strategic Plan (Nemzeti dunai vízi közlekedési stratégiai terv), 2013

The strategic plan and the connecting action plan (together: ProDuna strategy) are important outcomes of the ProDuna project supporting Hungarian inland navigation with several tools launched with EU co-fund. The document is a base to define the organizational and legal framework of inland navigation, its infrastructure and facilities, its public freight transport segment, education and R&D, eventually to improve the competitiveness of the industry.

ProDuna project focuses on the following areas:

- First pillar: market exploration
- Second pillar: development of infrastructure (shipping lanes, ports)
- Third pillar: fleet modernization
- Fourth pillar: job creation and vocational training
- Horizontal connection I.: the image of waterborne transport
- Horizontal connection II.: institutions with efficient and sufficient capacity

4.3.1 Current state

The construction of the Danube waterway is a primary issue for inland navigation in Hungary. Despite the unanimous commitment of the professional materials described in the alignment points, the domestic goals are only partially clear. Based on the economic and transport policy ideas and the resolutions of the professional organizations and enterprises of inland waterway transport, despite the efforts to develop the Danube waterway is being expressed in contradictory opinions in other fields (primarily in the field of environmental protection).

4.3.2 Desired state

The vision of IWT is based on an open, adaptable, dynamic economy based on competition and innovation, in which environmental protection plays a key role. This is reflected on the one hand, in the greater use of water transport, which is less polluting than other modes of transport, and on the other hand, in the replacement of technically obsolete and more greenhouse gas-emitting vehicles and the increased use of alternative fuels.

4.3.3 Gap identification

- Gap 1: no meaningful dialogue between sectors, interest groups Level: 1

There is no meaningful dialogue on this issue in scientific forums, in political life or between NGOs and interest groups. There is no professional, social or political decision on the issue of the modern construction of the Danube waterway, which fundamentally determines the future of water transport in Hungary. (At the same time, the system of arguments related to this must be included in the concept of complex water management.) This situation, which has existed for years, has led to an unfavourable international perception of domestic water transport. Thus, the sector should have discussion on the opposition economic transport development and environmental aspects.

4.3.4 Recommendations to close the gaps

- Gap 1: no meaningful dialogue between sectors, interest groups Level: 1

Action: open conferences, public data

Implementation strategy: common planning with all the stakeholders

Timeline: no exact time horizon within the strategy

Participants: NGOs, freight forwarders, ministries, citizens, environment protecting activists, port owners and operators

The following table summarizes the gaps identified in the *National Danube Water Transport Strategic Plan*, as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
1	no meaningful dialogue between sectors, interest groups	open conferences, public data

Table 4: National Danube Water Transport Strategic Plan strategy gaps and actions to close them

4.4 National Shipping Strategy (Nemzeti Hajózási Stratégia) 2012

The document was prepared by the transport workgroup of the State Secretary of Planning Coordination under the Ministry of National Economy in 2012. The two major declaration of the strategy are

Southward shift of Budapest's water passenger and freight traffic

Construction of a new type of low-draft Hungarian-designed ships

4.4.1 Current state

The vision of Hungarian navigation is greatly influenced by the economic processes that are becoming characteristic of the region: primarily globalization and integration processes. The limited availability of fossil fuels and the prominent role of environmental values have a significant impact. The above changes are accompanied by the following challenges:

- Mobility needs between and within Member States continue to increase
- Emissions regulations are becoming stricter
- CO2 emissions from the combustion of coal-based fuels are directly proportional to the amount of fuel used
- Fossil fuels are becoming more expensive while their quality is deteriorating
- Individual modes of transport are becoming more valuable in the settlement environment (shipping has returned in Budapest)
- The EU's external trade is developing more intensively than its internal trade

In addition to the international expectations, the requirements deriving from the development of the Hungarian national economy are of similar importance.

Examining the economic role of the Danube today, we must assume that the huge increase in traffic between Europe and the Far East will have a significant impact on the overall logistics of the Central European region. Congestion in western and northern European ports is leading to an increase in traffic to the EU's eastern seaports. From the point of view of Hungary, the increase in turnover experienced by Constanta, Koper and Rijeka in recent years is significant.

The rapid growth of road transport is causing a disproportionate environmental burden due to the important international road corridors passing through the country, and there is a danger that the infrastructural development of alternative routes bypassing Hungary will push the country even further out onto the EU periphery.

The Danube as a European Economic Area VII. Corridor 1 is of great importance in national and transnational spatial development programs and represents a huge logistical opportunity in the reorganized European transport system.

4.4.2 Desired state

Hungary is able to stop the current transit traffic with an adequate transport network, junctions and intermodal and multifunctional logistics centers, i.e. ports, and associated industrial parks, and provide added value. The current commodities for waterborne freight transport are large quantities of bulk goods. In Hungary, goods transported by water have long been present in the form of agricultural products and industrial raw materials, and further large increases in turnover can be achieved by diverting containerized goods by water, as has happened in Germany and the Netherlands in recent decades.

4.4.3 Gap identification

- Gap 1: Very few logistics centres settled by the Danube Level: 4

According to a German study, 28 of Germany's 35 largest centers have settled on the waterfront. There is a shortage of such nodes in Hungary, which provide the widest range of opportunities for the circulation of goods.

4.4.4 Recommendations to close the gaps

- Gap 1: Very few logistics centers settled by the Danube Level: 4

Action:

- Construction and modernization of berths
- Cargo ports:
  - Trimodal ports with logistics center (rail and road connection)
  - Transshipping ports (road connection)
  - Intermittent loading bays (mainly for agricultural products)

Implementation strategy:
Intermodal ports need to be developed, with state-owned land, connecting at least three transport sectors: road, rail and water. Supported port development has meant almost exclusively the construction of RO-RO terminals (Győr-Gönyű,

Budapest and Baja). In the future, the development of container terminals on the waterfront along the Hungarian Danube section should be promoted.
In addition to the current single trimodal container terminal, it is recommended to build at least two similar terminals above and below Budapest in the next decade.
Efforts should be made to ensure trimodality in the designation of multimodal nodes to be developed in the future, ie the development of logistics centers in ports should be supported.
The share of waterborne freight transport in the total distribution of transport work in Hungary should reach 8-10%.
The further appreciation of Budapest's international role can be based mainly on the city's place in the European settlement network. Budapest has a real opportunity to become one of the most important logistics centers in the region.

Timeline: no exact timeframe
Participants: ministry responsible for transportation, government level decision makers, logistics hubs, HFIP

The following table summarizes the gaps identified in the *National Shipping Strategy*, as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
4	Very few logistics centers settled by the Danube	Construction and modernization of berths Cargo ports: • Trimodal ports with logistics center (rail and road connection) • Transshipping ports (road connection) • Intermittent loading bays (mainly for agricultural products)

Table 5: National Shipping Strategy strategy gaps and actions to close them

4.5 Hungarian shipping, the Danube Strategy, and the Széchenyi Plan (A magyar hajózás és a Duna Stratégia, valamint a Széchenyi terv) 2010

This article is not a strategic document per se; however it was written by Botond Szalma, former president of MAHART, well-experienced in and expert of IWT. The purpose of the document published by the Ministry of Foreign Affairs in 2010 was to synthetize and find the coherence between different approaches, programmes and strategies regarding Danube navigation and port development.

4.5.1 Current state

It is unfortunate that inland freight and passenger transport – also shipbuilding, repair, port development and recreational shipping – have no responsible ministry. This industry has suffered from a chronic lack of investment and development over the past decades.

To change this there were two supporting tools launched in 2010. First, the Danube Strategy was launched by the EU and it should not have been the Hungarian national shipping strategy exclusively, but also the program for thinking and action of the Danube countries. Second of all, Széchenyi Plan has a positive tone about inland navigation. The designers have to pay attention to the fact that the title of the title of the chapter 'Transport – Transit Economy' has failed miserably, because Hungary shall avoid becoming a transit country. Hungary is already perfectly suited for that. Vessels do not even have to refuel, only purchase a sticker for a minimal price. Hungary must finally replace the medieval right to stop goods. This is the only chance to become a logistics service provider and create jobs.

The advantage of joining the EU is that when it come to the Danube, Hungary is forced into the middle of transnational and interregional cooperation. The European Commission has already highlighted the Rhine-Main-Danube waterway as one of the strategic components of a comprehensive transport policy in its 2001 White Paper. The Danube has become an essential issue in European transport policy when defining the EU budget for 2007-2013. It was therefore possible to adopt Decision No 884/2004/EC of the European Parliament and of the Council of 29 April 2004 amending Decision No 1692/96/EC on Community guidelines for the development of the trans-European transport network, emphasizing that the Danube and its navigability must be improved (unrestricted navigation on a minimum of 340 days a year). Recognition is very important in order for the EU Parliament to know and embrace the principle that improving the navigability of the Danube is not an internal affair of the riparian countries, as funding cannot be provided from the budgets of the participating countries. Additionally, the regulation of the Danube River was started not by Hungary, but by Austria and Germany in parallel with the construction of the dams. They also have to take their share of the investment.

Considering the dam systems: there are 16 locks north of Budapest and 4 locks south of Budapest on the Danube. (Another 16 locks have been built and still being operated on the DM canal and 34 on the Main). The Gabcikovo-Nagymaros issue has to be solved, as it strains the Hungarian-Slovak relations both professionally and politically. Furthermore, the water-construction challenges and opportunities of the section below Budapest have to be assessed in the foreseeable future.

Tools

It is useless to maintain and build a waterway if we do not have the right equipment to transport cargo and passengers. Today, 52 passenger ships and 30 pusher and self-propelled cargo vessels flying under the Hungarian flag have registration number and navigation license. The former MAHART operates 25 self-propelled vessels with Austrian flag. A total of 393 persons and companies have navigation license. (Ferries on the Tisza and boats on Balaton form a separate category, so they are left out of this list.)

Load

The cargo itself, in both quantity and content, will of course always be determined by the market. For the time being, IWT is suitable for the transport of bulk cargo, steel products, agricultural products, liquid raw materials and finished products, containers and people.

Today, Hungary's agriculture produces less output and more expensive crops between the already mentioned Danube and Tisza. In international markets, however, it also competes with EU Member States and subsidized US farmers in logistics, where the biggest cost – and competitive disadvantage – is the cost of transport and transhipment today.

Ports

The density of port network is adequate, so Hungary does not need to increase the number of ports, but the level of services provided.

In addition to the current state presented in the **strategy**, it shall be mentioned that the consortium of UTIBER Közúti Beruházó Kft. VÍZITERV Consult Kft. and the Budapest University of Technology and Economics performs the preparation tasks related to the development of the Trans-European Transport Network – TEN-T IWW with the participation of VÍZITERV.

According to the surveys, in the section between Szob and the South border, a total of 31 locations, a total of almost 52 km, need to be intervened to improve navigability in a way that satisfies the requirements of water management, environmental and nature protection. The number of intervention sites estimated in the section between Szap-Szob is 12, the length of the affected river section is 40 km.

4.5.2 Desired state

In the foreseeable future, a reasonable ratio of road, rail and waterborne transport can be established.

A reasonable division of labor between sub-sectors can significantly reduce average freight rates and the additional burden on the environment.

Regarding the main goals planned and stated in the Széchenyi Plan, the principle of maximizing benefits is good, but in addition to minimizing the social burden, it must be made clear that this means that almost equal load-bearing capacity must cover all transport sub-sectors. Thus the road must also play a role in this, by making a significant contribution to the actual cost of the environment, for example by introducing an electric toll. The competitive disadvantage of water carriers should no longer increase because unlike some rubbed road hauliers, they cannot do it any better. If a ship crosses a canal, docks in a harbor, employs a pilot, or bunkers, it must be officially paid for each time.

4.5.3 Gap identification

- Gap 1: Lack of a long-term strategy Level: 1

Unfortunately, due to many decades of neglect, the river itself and its Hungarian section are struggling with numerous problems. Therefore, it is important to ensure the navigability of the Hungarian section and the continuous development of the

service and loading infrastructure. To this end, the latter competent ministry commissioned a study entitled "Study for the Improvement of the Danube Navigability Project". The final report, which was the subject of several public debates was submitted to the Ministry in 2007. In the light of the experience of the study on the project to improve the navigability of the Danube, the European Commission considers that further support is justified, and Decision C (2008) 6788 on the trans-European transport network (TEN-T) was adopted. Studies on the improvement of the navigability of the Danube is about the provision of Community financial support for a project of common interest. Substantial work should have begun on the Danube in 2010, but this has not yet happened.

Gabcikovo power plant generates electricity in Slovakia, turbines were installed in the Freudenau sluice in Austria, inaugurating the last power plant in the Austrian Danube section.

During this time, we are idle watching what is happening to us in floods, we do not understand why there is no groundwater between the Danube and the Tisza, and we do not know the answer to the question of where our fresh water will be in 30 years. Today, we flush the toilets with good quality fresh water, while Israel imports drinking water in tankers. We calculate how many billions of damage the flood will cause in the country, but we do not count on how and to what extent all this can be protected with reasonable advance planning. We enjoy the snow in the winter and escape the floods caused by the melting snow and falling rain in March

Both passenger shipping and freight transport suffer from a chronic lack of investment. Today, the acquisition of a second-hand boat is also a serious problem for Hungarian shipping companies and sole proprietors. They are the SMEs and businesses that must finally be prioritized and without whose support the nation will never have a strong middle class. In the absence of investment and will, the market will run past us or through us. None of these are welcome vision.

The utilization, storage, inbound and transhipment speeds and quality of ports, and the infrastructure still need to be improved. A port that is not accessible by rail or on road without causing serious disruption to other sub-sectors shall not be used. Considering the possibilities of approaching the Freeport of Budapest: Since all its intersections are the same, if the railway serves the port, the road is at stand still.

Lack of strategy

In transport it is a serious mistake to think in 4-year election cycles. Anyone who invests in a ship or develops a port must think in at least 50-60 years ahead, and anyone who invest in the Danube, has to consider 200 years. Furthermore, today there is neither the institution nor the money to finally get professionals to actually work on the development.

4.5.4 Recommendations to close the gaps

- Gap 1: Lack of a long-term strategy Level: 1

Action:

The design and construction of three dams (Nagymaros, Adony and Fajsz) within 15-20 years shall be considered. Moreover, this will not be a forced task because of

shipping, but because of water management, flood protection, inland drainage, agriculture and the environment, and tourism. Shipping will only play a beneficial role in this case.

The desired water level in the riverbed should be raised by damming system and not by environmentally harmful dredging. Regarding dredging, it should be known that when the house factory program pounded at its fastest pace, the river itself carried ten times as much sediment and bed material from its own power, as the total amount dug out to the panels. A river, on the other hand, which will be built with dams in one of the sections, will no longer be able to transport and spread sediment on the section below.

Therefore, the water carves itself into the riverbed with multiple speeds due to its power. After that comes the case of water disappearing from wells and under fields, making it impossible for some of our agriculture.

The shipping community appreciates the support for combined transport and would consider the use of support similar to RO-LA to be at least as effective in IWT. For every ton transported on water, a subsidy of EUR 1-2 could be provided for the first 3-5 years, which shipowners could spend on development and modernization of equipment. The development of water transport requires equipment, cargo and infrastructure. Whether there will be enough cargo depends on the market, but public support will be necessary to build a competitive fleet.

Implementation strategy:

Tools

Purchasing a ship, building, or acquiring a used ship or a new ship, upgrading the existing fleet, and replacing obsolete 'main engines' require long-term loans of 15-20 years, such as those obtained by competing shipping companies in the Netherlands for the purchase of vehicles.

Cargo

The decision maker provides a stable, predictable, competitive, and meaningful economic, fiscal, and customs framework. In this case, the investors will not be customs in the neighboring countries, they will sell and employ domestic labor, and they will also be taxed. Creating a stable framework is a fundamental task for the state and filling it with content is the task of market players. Ports and logistics centres could be included here, although they could be included in the second point, as the cargo provided by the market has to pass through these centres. Shipping is affected by this segment even in transit. It is clear that both cargo and equipment are affected by the existence or non-existence of ports and logistics hubs.

Port development

An additional challenge and tender opportunity may be the issue of the establishment of covered loaders, which can easily bring the number of loading days close to the optimal 365 per year. This also benefits ports and shipping companies by minimizing the number of lost loading hours – sometimes days.

Timeline: 200 years

Participants: governmental level decision-makers, interest groups

The following table summarizes the gaps identified in the paper called *Hungarian shipping, the Danube Strategy, and the Széchenyi Plan*, as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
1	lack of a long-term strategy	Design and construction of three dams (Nagymaros, Adony and Fajsz) within 15-20 years because of water management, flood protection, inland drainage, agriculture and the environment, and tourism. Shipping will only play a beneficial role. The development of water transport requires equipment, cargo and infrastructure. cargo: The decision maker provides a stable, predictable, competitive, and meaningful economic, fiscal, and customs framework. Ports: Establishment of covered loaders. Tools: long-term loans of 15-20 years for purchasing ships or upgrading the existing fleet

Table 6: Hungarian shipping, the Danube Strategy, and the Széchenyi Plan strategy gaps and actions to close them

4.6 Budapest Agglomeration Railway Strategy (Budapesti Agglomerációs Vasúti Stratégia) 2020

The strategy was completed by the Budapest Development Center (Budapesti Fejlesztési Központ, BFK). The strategy defines long-term goals and includes development actions in terms of suburban railway transport connecting the capital and its agglomeration, and it reconsiders the role of railway and suburban-railway lines in Budapest and in the metropolitan area.

The strategy aims to increase the number of passengers on suburban railways by 80% till 2040 through the implementation of interdependent, complex investments.

4.6.1 Current state

523 thousand journeys are made daily on the railway lines running to Budapest, 89% of which are suburban journeys. Approximately a quarter of a million people in the Budapest area currently use the railway and the suburban railway (HÉV). The capital has 42 stations with regular passenger traffic:

- there are a total of 234 thousand boarding passengers on a weekday 32,000 of which use the railway to travel within Budapest
- more than 65,000 passengers turn up daily at the Nyugati railway station.

From rail passenger traffic on suburban lines

- suburban passenger traffic is 66 million people
- long-distance passenger traffic is 15 million people
- international passenger traffic is 3 million people

Proportion of traffic affecting Budapest and the suburbs within the national rail passenger traffic without and with suburban railways (HÉV) in 2019:

- non-Budapest national rail traffic: 54 million people
- railway traffic reaching Budapest and the suburbs: 84 million people (61% within state railway company, MÁV)
- HÉV annual passenger traffic: 73 million people (74% including the above)

In suburban traffic, following time is 30 minutes in passenger trains.

On the Esztergom, Vác, Újszász, Cegléd and Székesfehérvár lines, suburban fast (zoning) trains complete the offer. Suburban high-speed trains run on the inner suburban section every 30 or 60 minutes. There is only one hourly train per hour on the single-track Veresegyháza, Lajosmizse and Kunszentmiklós lines.

In the outer section, a follow-up time of 60 minutes is common. Lajosmizse line is not electrified, there is diesel towing here. A small-town population moves to the settlements around Budapest every year.

- by 2040, the population of 3 million in the Budapest agglomeration area could increase by another 200,000
- the swelling of the agglomeration is accompanied by the depopulation of the city center: between 1960 and 2017

- the population of Budapest's inner districts has halved
- the population of the agglomeration has increased by 60%

4.6.2 Desired state

Commuters would like to have a railway that is reliable, fast and more connected to the city. With a suitable alternative, people are reluctant to give up driving. With the implementation of the strategy, the number of train passengers in the Budapest agglomeration area could increase by 80%. Railway development is the only possible solution to the growing transport challenges in the central region. CO2 emissions from rail passenger transport are, on average, a third of that of petrol and diesel cars. A reduction in gross GHG emissions of 52-85% must be achieved by 2050, and this will require an increase in the share of rail among transport modes.

By 2030, 30% of road freight traffic over 300 km will have to be diverted to rail, and y 2050, 50% will be diverted to transit traffic in Budapest, which is why the development of railways in the region is essential. State-of-the-art technological solutions are needed for the smooth, efficient and high-quality operation of the railway.

The strategy aims from all suburban train stations:

- at least 4 trains per hour to depart to Budapest
- with direct access to at least 3 metro lines
- it can be used with a single season ticket or ticket

Traffic potential:

- standard, high-level service (2 suburban express, 4 passenger trains per hour on each line)
- standard good accessibility of stations and stops
- high track speeds assuming ideal track conditions
- reduction of delays
- high quality vehicles
- with bus loading and standard availability of P+R, B+R parks
- 115,000 car commuters less and 80% more daily rail passengers
- traffic growth
  - long-distance – suburban trips: +10%
  - travel between suburbs and Budapest: +63%
  - distance traveled from Budapest: 11%
  - journeys between long-distance destinations: +17%
  - travel between suburbs: +63%
  - travel within Budapest: +308%

Desired status based on foreign examples:

- in a similar agglomeration of Munich, the railway carries 3 times as many passengers as Budapest (a common section of lines runs through a 4.3 km long tunnel below the city, providing connections to the city center and excellent transfer options)

- demolition of Vienna's old main railway station with the construction of a new main railway station with a transitional system (the railway has become an integral part of urban public transport and provides a fast, convenient connection between Western and Central Europe)
- the 7 most important national railway lines running to Warsaw have been laid on a 7 km long ridge line (2.3 km in a tunnel)
    - The suburban high-speed railway, launched in 2004, opened a new chapter in the quality of railway services and responded to the challenges arising from the growth of agglomerations.
    - the environment of its stops is the target area of urban development, residential and workplaces are created, the quality of urban public spaces is constantly improving, thus positively influencing the economy and the livability of the city.
- A new four-track railway corridor connecting the main railway station with 4 other city stations has been created in Prague. The number of passengers doubled in 2010. A new 9 km railway tunnel is planned to be connected to the existing metro lines under the Vltava. Areas covered by existing surface stations are being reconsidered.

Today, the number of trains crossing the borders of Budapest is 42 trains per hour, with a target of 93 trains per hour.

- incoming trains pass through the stations within minutes, the traffic is continuous, 12 trains per hour per track
- the development of a transit station system will free up valuable areas

A new connection across the Danube provides the railway a new role in the capital

- several new connections
- downtown job exploration
- significantly increases the role of rail in intra-city transport
- several new non-transfer connections
- railway capacity in Budapest will increase, at the same time it will be possible to close the Déli Railway station
- most passengers are attracted from private transport by the crossing system, plus the low environmental impact and noise impact are also the advantages of rail transport

4.6.3 Gap identification

- Gap 1: Budapest-centric network, but no more capacity Level: 1

61% of the national railway traffic is completed on the Budapest network, which has been petrified for 100 years. 53% of the track sections of Budapest are awaiting renovation. This causes delays, does not allow trains to be compressed, and the benefits of modern motor trains cannot be realized.

Track renovations did not affect the most critical internal sections. Most of the stations and stops are undergoing reconstruction. With few exceptions, the location of railway stations is unfavourable. The development of passenger facilities is incomplete. The environment of the stations is neglected, and the facilities providing the loading (P+R, B+R) are incomplete.

Lack of capacity and technical conditions cause permanent delays for trains.

- power equipment faults
- problems in securing crossings
- overhead line disturbances
- lack of prompt handling of disturbances

Conclusions

- frequent, unexpectable latencies
- doubled estimated time

Besides there is no more space for commuting cars:

- in a decade in Central-Hungary, 25% more cars on roads
    - in the agglomeration, the increase is twice of that in the capital, 36%
- in Budapest, 6 people out of 10 use public transportation, while in the agglomeration, only 3 out of 10
- 37 minutes a day spent in traffic jam causes 300-billion-forint damage in the national economy

The railway passes through several important crossings without stopping, it does not take part in the transport and circulation of the capital.

The outdated structure does not allow the railway to play a greater role:

- limited number of transfer options
- main stations prevent train congestion
- there is little and congested connection across the Danube
- Újpest railway bridge only serves the Esztergom line
- the southern part is the busiest section of the country, the bridge is currently being built, which is able to handle the railway traffic between the two parts of the country

In Budapest, transportation contributes the most to air pollution. Air quality is directly influenced by air polluting materials. Polluted air causes health problems.

4.6.4 Recommendations to close the gaps

- Gap 1: Budapest-centric network, but no more capacity Level: 1

Action:

The expansion of the southern ring railway is the first step to solve the bottleneck with a frequency of 10-15 minutes per direction, new transit connections, direct, cross-Danube, diameter suburban services.

Action:

Tunnel connecting Kelenföld, Déli and Nyugati railway stations

Impementation strategy

- A double-track, electrified railway line that would only serve passenger traffic would be settled in the approx. 4.5 km long tunnel
- the maximum capacity of the tunnel would be 24 trains per hour in one direction, meaning trains could follow each other every 2.5 minutes
- The Budapest Development Center is preparing a detailed feasibility study examining several routes. Planned stations:
  - Western Railway Station
  - Southern Railway Station – Széll Kálmán square
- For the efficient operation of the tunnel, the capacity of the surface sections leading to it must be developed: Vác, Hatvan, Újszász, Cegléd lines, Zugló ring railway, Outer ring railway, Kelenföld station

Action

Suburban and urban railway network – rail service crossing Budapest

Implementation strategy

- Some of the connections from the suburbs end at the remaining headquarters
- The other part of the suburban lines becomes an interconnected route and continues on the other external terminals on diameter or transverse network sections
- On the common sections of the suburban lines, metro-like frequency will be provided and new connections will be established, the railway will be connected to the traffic of Budapest.

Action

Long-distance network – Budapest is not a terminus, long-distance trains can cross the country

Implementation strategy

- The central, interchangeable railway system to be built on the basis of the Strategy will also ensure the reception conditions of the planned high-speed and international lines in the capital with the appropriate quality and capacity:

- Budapest – Warsaw (Visegrád 4) high-speed railway
- Budapest – Cluj-Napoca high-speed railway
- Budapest – Belgrade high-speed railway

- Some long-distance trains become a transit system, crossing the capital via the Tunnel or the Southern Ring Railway
- The terminus of the other long-distance trains will remain at the Keleti and Nyugati stations

Timeline: 2040

Participants: Budapest Development Centre, Hungarian State Railway Company (MÁV Group)

The following table summarizes the gaps identified in the paper called *Budapest Agglomeration Railway Strategy*, as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
1	Budapest-centric network, but no more physical capacity	The expansion of the southern ring railway is the first step to solve the bottleneck with a frequency of 10-15 minutes per direction, new transit connections, direct, cross-Danube, diameter suburban services. Tunnel connecting Kelenföld, Déli and Nyugati railway stations Suburban and urban railway network – rail service crossing Budapest Long-distance network – Budapest is not a terminus, long-distance trains can cross the country

Table 7: Budapest Agglomeration Railway Strategy gaps and actions to close them

4.7 Mid-term Logistics Strategy (Középtávú Logisztikai Stratégia), 2013

The primary goal is to prepare a strategic plan coherent with related strategies adopted by the government and experts (National Transport Strategy, National Development 2020, New Széchenyi Plan) and international expectations in order to manage logistics according to its economic weight which, if implemented, could make a significant contribution to employment and to expand investments and improve Hungary's competitiveness.

4.7.1 Current state

Hungary's logistics performance is ranked in the middle within the EU member states.

Logistics expertise / Human resources

- experienced professionals in the sector

- wide range of educational opportunities in high school and academic levels
- favorable earning opportunities in the capital and in the agglomeration
- however, education is too theoretical less practical,
- low willingness at companies to invest in trainings and education of employees

4.7.2 Desired state

Logistics developments play a key role in strengthening corporate competitiveness in a world of globalized supply chains and sales channels. Based on that, the main elements of the proposed value-based target state (vision) are:

- at the enterprise (micro) level: the logistics vision focuses onto a fundamental development process in which companies organize their internal logistics processes more and more efficiently. An important element of this is business organizations focusing on their core competencies and activities, outsource some of their activities. In addition, a modern logistics background is of utmost importance in terms of achieving sectoral and industrial policy goals.
- Overall, in line with the spread of practices and culture of advanced market economies, the general economy in Hungary may shrink as well cost level and improve logistics and production and service quality of activities, which are also for domestic companies and the economy as a whole result in increased competitiveness.
- at national economy (macro) level: in terms of strategic vision according to a decisive concept with the enlargement of the European Union, Hungary still has the opportunity to become a logistics service center in the region.
- This opportunity is due to Hungary's geographical location and the directions designated as development priorities by the TEN-T network, since transport corridors IV, V, VII and X passing through Hungary and crossing each other in Budapest can create the center of regional flow of goods. Hungary becoming a logistics service center in Central and Eastern Europe would have a positive impact on a number of other areas:
  - increase the country's ability to attract and retain capital
  - the supply of goods and services to the population
  - reducing regional disparities
  - improving the value of LPI and other World Bank indices

4.7.3 Gap identification

Gap 1: weaknesses of the human resources Level: 1

- Vocational Education and Training system is too theory-oriented, often completely "practice-free"
- long, inflexible, and sometimes expensive courses in vocational training
- intensive in-company training often needs to be used to replace the preparedness of those who leave the education system

- the career tracking system of logistics specialist training is incomplete
- logistics education and training are not fully in line with the expectations set by employers
- low "training awareness" and training activities of fast-growing Hungarian private companies, excessive withdrawal of funds from state-funded forms of education
- due to lower wages, the supply of logistics specialists in rural areas and in the SME-sector may be limited

Gap 2: weaknesses of the stakeholders Level: 2

- bipolar logistics providers segment: dominant large companies and underfunded SMEs
- the competitiveness of smaller domestic companies is constantly weakening in the increasingly complex logistics sector
- high value-added content of integrated services is relatively low

Gap 3: weaknesses of node infrastructure Level: 3

- the quality of current logistics tools is uneven: domestic logistics development of center, it lags behind the Western European level and is particularly developed solutions (e.g., e-freight, RFID) significant backlog
- Budapest-centric logistics network

Gap 4: weaknesses of IT infrastructure Level: 1

- despite the coverage of broadband networks, only medium and large companies have complete internet access
- SME logistics activities supporting IT background (corporate governance system, warehouse IT, etc.) lags significantly behind from large companies

Gap 5: weaknesses of international relations Level: 2

- low effectiveness of logistics diplomacy
- currently bipolar economic diplomacy
- transport and logistics regulation is struggling with a shortage in terms of specialists
- lack of institutionalized forms of inter-ministerial coordination
- national customs policy has no guidance in Hungary: no economic policy concept behind the customs diplomacy

Gap 6: weaknesses of networking and cooperation Level: 1

- lack of cooperation culture in the domestic SME sector

- despite the positive individual examples among logistics actors, networking and cooperation are not considered widespread
- most logistics companies do not make strategic agreement with other service providers
- collaboration between logistics companies is often on unique demand and on a temporary basis
- supported collaborations are rather based on parallel capacities and not complementary activities of high added value

Gap 7: weaknesses of R&D Level: 1

- domestic R&D activities are outstanding weak point of cooperation between SMEs and large foreign corporates and knowledge bases
- in the domestic medium-sized enterprise sector, market-led R&D is relatively little
- most domestic logistics SMEs do not manage R&D activities neither service development
- narrowing of domestic innovation funding (innovation contribution)

4.7.4 Recommendations to close the gaps

Logistics expertise / Human resources

- Gap 1: weaknesses of the human resources Level: 1

Action

- high-quality, practical, interdependent, and interoperable educational activities in secondary and higher education and vocational training tailored to company needs

Implementation strategy

introduction of regulation and incentives to strengthen cooperation between the academic and corporate sector

- developing and launching quality logistics training that is better adapted to market needs
- increase interoperability between educational areas
- conduct regular educational skill-gap surveys and provide feedback

Logistics expertise / key players

- Gap 2: weaknesses of the stakeholders Level: 2

Action

- developing the logistics role and culture of Hungarian SMEs and
- contribute to the success of the sector through a coordinated effort by the private and civil sectors and the public administration

Implementation strategy

Strengthening the institutional forms of market-civil-government cooperation and increasing its efficiency

Government and key logistics players reach consensus on the priorities of sectoral development

- developing the logistics role and culture of Hungarian SMEs
- secondary demand generated by the manufacturing industry and the agricultural sector can be used to a greater extent by the logistics sector
- increased use of the development potential of "soft elements" (logistics business development services)
- reducing the tax and administrative burden on logistics providers
- development of a logistics inventory system to provide more informed market information

Logistics infrastructure / node infrastructure

- Gap 3: weaknesses of node infrastructure Level: 3

Action

Addressing the Budapest-centric nature of node infrastructure

- establishing a co-operative system of logistics centers
- developing cross-border logistics co-operation in coordination with EU transport corridors
- increased exploitation of the potential of the existing and to be developed node infrastructure
- increasing the environmental sustainability of the logistics activity implementation strategy solving the Budapest-centric logistics network
- intensive developments in "city logistics", "green logistics" and "inverse logistics"
- development of cross-border logistics cooperation
- increased potential of node infrastructure

Logistics infrastructure / IT infrastructure

- Gap 4: weaknesses of IT infrastructure Level: 1

Action

Facilitate in-house IT developments to reduce logistics transaction costs in the SME sector

- improve the efficiency of internal processes in the SME sector
- Modern e-government and e-local government services to reduce the administrative burden of logistics transactions

Implementation strategy:

Supporting the development of broadband optical infrastructure in locations where this investment would not be justified on purely business grounds.

- developing e-government services tailored to business logistics needs to reduce administrative burdens and transaction costs
- logistics micro and small businesses without internet access recognize the potential of online operations

Logistics relations / international relations

- Gap 5: weaknesses of international relations Level: 2

Action

Ensuring more favourable conditions for cross-border logistics, make Hungary a more attractive logistics investment destination.

Implementation strategy

More effective logistics diplomacy can improve international advocacy capacity

- more active participation in the work of international organizations
- more thoughtful and effective logistics country marketing
- timely and successful preparation of the sector for the next funding period
- appointment of the Ambassador for Logistics in Brussels

Logistics relations / networking and cooperation

- Gap 6: weaknesses of networking and cooperation Level: 1

Action

Substantially promote the development of networking and cooperation in the logistics service sector

Implementation strategy

The strengthening of networking and cooperation can play an important role in stabilizing the market position and improving the competitiveness of domestic logistics players

- integration of SME suppliers into the logistics sector
- intensification of clustering due to economies of scale
- strengthening and spreading of sales cooperatives

Logistics R&D&I

- Gap 7: weaknesses of R&D Level: 1

Action

Development of logistics knowledge bases, flow and use of knowledge – support of less common but essential forms of innovation for rationalization of logistics processes (process and organizational innovation solutions) – harmonization of research supply and corporate innovation needs (R&D gap), support for innovation networking.

Implementation strategy

Harmonization of research supply and research innovation needs (R&D gap)

- the growing role of companies in orienting logistics R&D&I activities
- supporting innovation networking
- in addition to product and technological innovation, service innovation should be an activity to be supported (considered as R&D)
- stimulating logistics innovation through direct but conditional public support and, subsequently, indirect support through elements of the tax and contribution system.
- increasing attention should be paid to the development of adaptation skills and activities in Hungary

As a conclusion, the main groups of instruments and directions of intervention emerged in order to achieve the goals formulated in the strategy are as follows:

- Development of administrative services relevant to logistics
- Modernization of logistics education
- Establishment of accounting and monitoring systems
- Promoting networking and cooperation in the logistics sector
- Support for logistics R&D&I
- Supporting logistics infrastructure development
- Ensuring the sustainability of logistics activities

Timeline: 2014-2020

Participants: Ministry for Innovation and Technology, Ministry of Human Resources, logistics companies,

The following table summarizes the gaps identified in the paper called *Mid-term Logistics Strategy*, as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
1	weakness of HR	high-quality, practical, interdependent, and interoperable educational activities in secondary and higher education and vocational training tailored to company needs
2	weakness of stakeholders	developing the logistics role and culture of Hungarian SMEs and contribute to the success of the sector through a coordinated effort by the private and civil sectors and the public administration
3	weakness of node infrastructure	Addressing the Budapest-centric nature of node infrastructure
1	weakness of IT infrastructure	Facilitate in-house IT developments to reduce logistics transaction costs in the SME sector
2	weakness of international relations	Ensuring more favourable conditions for cross-border logistics, make Hungary a more attractive logistics investment destination.
1	weakness of networking and cooperation	Substantially promote the development of networking and cooperation in the logistics service sector
1	weakness of R&D	Development of logistics knowledge bases, flow and use of knowledge – support of less common but essential forms of innovation for rationalization of logistics processes (process and organizational innovation solutions) – harmonization of research supply and corporate innovation needs (R&D gap), support for innovation networking.

Table 8: Mid-term Logistics Strategy gaps and actions to close them

5 Gap analysis summary

5.1 Gaps, actions to close the gaps and strategy inputs

Below table summarizes the gaps and actions to close the identified gaps.

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	Encourage mode change Generate additional demand Establishment of a financing system Human resource development Creating a sustainable regulatory environment	Danube ports have transformed into logistics hubs They more fit into their regional economy, contribute to economic growth and job creation 53 inland ports, within which 3 are national public ports and 1 public port Capacities are much higher than utilized	Danube inland ports become determinant and efficient multimodal hubs in their regional transport system to carry 10% of domestic cargo traffic on ecofriendly inland waterways	Low utilization of port capacity	Education training, Technological modernization, Financing, Investment promotion, industrial establishment, Legislation, concepts, Infrastructure development, Career model, Digitalization, automation, Sustainability, Market research, innovation	12/2030
	Improvement of health and property safety Reduction of territorual inequalities Strengthening international relations Strengthening resource-efficient modes of transport Increase the quality and efficiency of transport services Repair of physical components	The volume of freight transport on water – 5-6 million tonnes per year and it exclusively means Danube ports – decreases in terms of loading and shows a slow increase in terms of unloading year by year.	an equivalent task to increasing competitiveness is to ensure the preservation of natural and human values and resources, the conditions for sustainable growth, and the coordination of environmental and economic, national and EU objectives that may conflict with each other.	low-level navigation conditions on the Danube	Ro-La transport Increase the size of port areas with infrastructure for multimodality by 8,000 m2 in 2030 and 15,000 m2 in 2050 Increase the length of water infrastructure equipped with intelligent transport system to 378 km in 2030.	12/2050

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	market exploration and exploitation of explored markets development of infrastructure (shipping lanes, ports) fleet modernization job creation and vocational training the image of waterborne transport institutions with efficient and sufficient capacity	despite the efforts to develop the Danube waterway is being expressed in contradictory opinions in other fields (primarily in the field of environmental protection).	an open, adaptable, dynamic economy based on competition and innovation, in which environmental protection plays a key role. This is reflected on the one hand, in the greater use of water transport, which is less polluting than other modes of transport, and on the other hand, in the replacement of technically obsolete and more greenhouse gas-emitting vehicles and the increased use of alternative fuels.	no meaningful dialogue between sectors, interest groups	open conferences, public data and information common planning with all the stakeholders	no exact time horizon within the strategy
	Mobility needs between and within Member States continue to increase Emissions regulations are becoming stricter CO2 emissions from the combustion of coal-based fuels are directly proportional to the amount of fuel used Individual modes of transport are becoming more valuable in the settlement environment	the huge increase in traffic between Europe and the Far East will lead to an increase in traffic to the EU's eastern seaports. The rapid growth of road transport is causing an environmental burden due to the important international road corridors passing through the country, and the infrastructural development of alternative routes bypassing	Hungary is able to stop the current transit traffic with an adequate transport network, junctions and intermodal and multifunctional logistics centers, i.e. ports, and associated industrial parks, and provide added value. Further large increases in turnover can be achieved by diverting containerized goods by water.	very few logistics centres settled by the Danube	Construction and modernization of berths Cargo ports: Trimodal ports with logistics center (rail and road connection) Transshipping ports (road connection) Intermittent loading bays (mainly for agricultural products)	no exact time horizon defined in the strategy

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	maximizing benefits whilst minimizing the social burden almost equal load-bearing capacity must cover all transport sub-sectors road shall be making a significant contribution to the actual cost of the environment, for example by introducing an electric toll the competitive disadvantage of water carriers should no longer increase	inland freight and passenger transport – also shipbuilding, repair, port development and recreational shipping – have no responsible ministry. 16 locks north of Budapest and 4 locks south of Budapest on the Danube. The density of port network is adequate, so Hungary does not need to increase the number of ports, but the level of services provided.	In the foreseeable future, a reasonable ratio of road, rail and waterborne transport can be established. A reasonable division of labor between sub-sectors can significantly reduce average freight rates and the additional burden on the environment. The Gabcikovo-Nagymaros issue has to be solved	lack of a really long-term strategy	3 dams within 15-20 years, establishment of covered loaders in ports cargo: The decision maker provides a stable, predictable, competitive, and meaningful economic, fiscal, and customs framework. Ports: Establishment of covered loaders. Tools: long-term loans of 15-20 years for purchasing ships or upgrading the existing fleet	200 years
	increase the number of passengers on suburban railways by 80% till 2040 through the implementation of interdependent, complex investments	523 000 journeys are made daily on the railway lines running to Budapest, 89% of which are suburban journeys. In suburban traffic, following time is 30 minutes in passenger trains.	Commuters would like to have a railway that is reliable, fast and more connected to the city. With a suitable alternative, people are reluctant to give up driving. A new connection across the Danube provides the railway a new role in the capital 93 trains per hour crossing the borders of Budapest	Budapest-centric network, but no more capacity	The expansion of the southern ring railway is the first step to solve the bottleneck with a frequency of 10-15 minutes per direction, new transit connections, direct, cross-Danube, diameter suburban services. Tunnel connecting Kelenföld, Déli and Nyugati railway stations Suburban and urban railway network – rail service crossing Budapest Long-distance network – Budapest is not	2040

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
					a terminus, long-distance trains can cross the country	
	managing logistics according to its economic weight which could make a significant contribution to employment and to expand investments and improve Hungary's competitiveness	Hungary's logistics performance is ranked in the middle within the EU member states.	companies organize their internal logistics processes more and more efficiently. increased competitiveness Hungary becomes a logistics service center in the region	weakness of HR, of stakeholders, of node infrastructure, of IT infrastructure, of international relations, of networking and cooperation, of R&D	high-quality, practical, interdependent, and interoperable educational activities in secondary and higher education and vocational training tailored to company needs developing the logistics role and culture of Hungarian SMEs and contribute to the success of the sector through a coordinated effort by the private and civil sectors and the public administration Addressing the Budapest-centric nature of node infrastructure Facilitate in-house IT developments to reduce logistics transaction costs in the SME sector Ensuring more favourable conditions for cross-border logistics, make Hungary a more	2020

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
					attractive logistics investment destination. Substantially promote the development of networking and cooperation in the logistics service sector Development of logistics knowledge bases, flow and use of knowledge – support of less common but essential forms of innovation for rationalization of logistics processes (process and organizational innovation solutions) – harmonization of research supply and corporate innovation needs (R&D gap), support for innovation networking.	

Table 9: Gap analysis summary for (Hungary)

6 Conclusions

The presented strategic documents provide an overall view of IWT, shipping, ports and navigability in the Hungarian Danube section which is an international TEN-T water corridor connecting the North and the Black Sea.

The density of Hungarian Danube ports is adequate. There is no need for more ports, but the level of services provided, their infra and superstructure, trimodal connections shall be improved. They contribute to carry 10% of domestic cargo traffic on IWW.

Significant change has not happened in the previous years concerning quantity and type of cargo transhipped in Hungarian Danube ports. Volumes, turnovers are the same, even though capacities have been expanded, technology have been improved.

It would be essential in transport to think over 4-year election cycles. Who invests in a ship or develops a port must think in at least 50-60 years ahead, and who invests in the Danube must consider 200 years.

Regulation of the Danube and construction of dams are important because of water management, flood protection, inland drainage, agriculture and the environment and tourism. Shipping will only benefit from these changes.

Strategies calls for attention to the huge increase in traffic between Europe and the Far East which leads to an increase in traffic to the EU's eastern seaports (e.g.: Constanta). To be prepared for the growing traffic, Hungary needs an open, adaptable, dynamic economy based on competition and innovation, in which environmental protection plays a key role. Besides increasing competitiveness, we must ensure the preservation of natural and human values and resources, the conditions for sustainable growth, and the coordination of environmental and economic, national and EU objectives that may conflict with each other.

7 References

Ex Ante Consulting Ltd. (2019): *Országos Kikötőfejlesztési Főterv (National Port Development Master Plan)*

Ministry of National Economy, Transport Development Coordination Center (2014): *Nemzeti Közlekedési Infrastruktúra-fejlesztési Stratégia (National Transport Infrastructure Development Strategy)*

ProDuna-stratégia (2013): *Nemzeti dunai vízi közlekedési stratégiai terv (National Danube Water Transport Strategic Plan)*

Transport workgroup of the State Secretary of Planning Coordination under the Ministry of National Economy (2012): *Nemzeti Hajózási Stratégia (National Shipping Strategy)*

Szalma Botond (2010): *A magyar hajózás és a Duna Stratégia, valamint a Széchenyi terv (Hungarian Shipping and the Danube Strategy and the Széchenyi Plan)*. Publication of the Ministry for Foreign Affairs

Iparfejlesztési Közhasznú Nonprofit Kft (IFKA), Logisztikai Egyeztető Fórum (LEF) (2013): *Középtávú logisztikai stratégia 2014-2020 (Midterm Logistic Strategy 2014-2020)*

Budapest Fejlesztési Központ (BFK) (2020): *Budapesti Agglomerációs Vasúti Stratégia 2040 (Budapest Agglomeration Railway Strategy 2040)*

Interreg
EUROPEAN UNION
Danube Transnational Programme
DIONYSUS

Integrating Danube Region into Smart & Sustainable Multi-modal & Intermodal Transport Chains

Analysis of European & National Transport Policies, Strategies & Programs with regard to the Danube Ports

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Table of Contents

Executive summary

Within this document we analyzed documents from the overall transport sector and from different transport branches on the state level and strategic documents from transport sector on the regional level.

We can state that many of the strategic documents expire long before new issues are prepared and adopted by the relevant bodies, what can cause and causes problems when preparing the specific projects for financing, because they do not have necessary background in strategic documents. That should be avoided.

Priority projects and criteria for defining priorities are not clearly defined. Mid-term strategic documents do not foresee some of the projects risks and non realization and they are not allowed to be adjusted/changed in line with real needs and market demands. That should be changed.

Some projects from different transport sectors, which are all within the same Ministry, overlap and are obstacle to one another. That happened with railway project in Vukovar Port which strongly reflected other projects connected with port development, which should be a priority in this area.

It is also important to check all the data when preparing any of strategic development plans of any level with authorities from the specific sector, in order not to have incorrect data in strategic documents.

In general, all projects from the transport sector should be seen as part of general transport network and their realization should be accelerated especially if they reflect on other transport branches.

1 Table of Figures

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3 Abbreviations

Abbreviation	Explanation
TDS	Transport Development Strategy
RTDS	River Transport Development Strategy
MTDP	Mid-term Development Plan for Inland Waterways and Ports
NPRI	National Program for the Railway Infrastructure
CMPR	Construction and Maintenance of Public Roads Program 2017-2020
TMPEC	Transport Master Plan of the East Croatia Functional Region

4 Introduction

Transport Development Strategy for the period 2017-2030 (Official Gazette 84/17), (further: TDS) is an overall transport strategic document which main objective is to reform national transport policy. It gives the analysis of all transport sectors (road, rail, air, inland waterways and sea transport, public-city, suburban and regional urban mobility). Strategy defines general and specific objectives for transport development and gives general and specific measures for every transport branch.

Based on the TDS Croatian Government should adopt River Transport Development Strategy (further: RTDS). RTDS contains basic specific goals that are relevant for inland navigation and ports. With the focus on objectives, measures have been defined. RTDS was valid in the period between 2008-2018.

Government Program 2020-2024 is a short-term act which is of national significance. It defines priorities of the Government during its mandate. It represents the framework for national reform program, convergence program National Recovery and Resilience Plan (further NRRP) and implementation programs of the state administration. Priorities are: social security (health, solidarity, fairness); prospective future (competitive, vital, educated Croatia); economic sovereign (independent, sustainable and green Croatia); reinforced statehood (efficient, resistant and digital Croatia); global recognizability (proud, safe and influential Croatia). Transport infrastructure is one of the priorities of the Government Program. One of the statements is development of inland ports (Osijek, Vukovar, Slavonski Brod, Sisak) and inland waterways transport (Drava, Danube, Sava).

Ministry of Sea, Transport and Infrastructure Strategic Plan 2020-2022 gives the vision of the highly developed, efficient, secure, environmental friendly and modern transport and communication system which should be integrated in international transport network and which should maximize utilization of the transport and geographic position of Republic of Croatia and meet the needs of the cargo and passenger freight. The objectives for inland navigation are defined together with modes of their realization.

To have the coordination between the strategic documents from different transport modes is of great importance for the whole transport sector because all transport branches and chains are more or less depending on one another and they should be functional. It should be even easier because all transport branches are within the same Ministry.

5 Strategies with existing or potential influence on ports

Transport development strategies, policies and programs identified to have substantial or more than marginal influence on ports are listed in the following table.

Economic development strategies, policies and programs	Mentioning ports	Not mentioning ports, but could or should affect ports	Low influence on ports	Medium influence on ports	Strong influence on ports
River Transport Development Strategy 2008-2018	X				
Mid-term Development Plan for Inland Waterways and Ports 2009-2016	X				
National Program for the Railway Infrastructure 2016-2020					X
Construction and Maintenance of Public Roads Program 2017-2020		X			
Air Transport National Safety Program			X		
Transport Master Plan of the East Croatia Functional Region	X				X

Table 1: Listing of transport development strategies and their influence on ports

5.1 River Transport Development Strategy 2008-2018

5.1.1 Current state

RTDS is a document which was valid for the period between 2008-2018 (Official Gazette 65/08). From 2018 and until today, new Strategy has not been adopted. From 2019 all strategic documents considering river transport and ports are under preparation.

RTDS is based on the TDS and on European transport policies and action plans for their realization. RTDS was prepared before the Croatian EU integration processes. RTDS pointed out overall transport system disintegration of the transport network as the main problem of inland transport functionality. In that sense, long term objective - network integration within the transport corridor Danube Region - Adriatic was defined. As the significant aspects for the inland navigation, navigation security and environmental protection have been underlined. One of the important issues is the

market, in the sense of increasing the share of the river transport in the overall transport services market by integrating in the multimodal chains.

Waterway and ports infrastructure were pointed out as of significance, as their development, and their development should be planned in the multi-annual programs.

Danube-Sava Canal, River Information Services implementation, environmental protection in line with EU policies, shipping, employments, education, sector promotion activities and administrative capacities have been also important objectives.

5.1.2 Desired state

It is important for the documents as RTDS to be up to date, not to have such a long gap between one and other issue. This is important, first of all, from the aspect of financing the projects from the inland navigation sector, projects that are of importance for the inland waterways and ports.

Strategy should define the main objectives of the inland sector development and measures to achieve them. It is important to take into account all relevant projects and their impact on each other, not to have one project which is burden to other or the obstacle for other projects realization. Priorities should be clearly defined and criteria for their priority over another projects.

5.1.3 Gap identification

- Gap 1: lack of continuity of strategic documents Level: 1
- Gap 2: lack of project defining and financing sources availability due to strategy missing Level: 1

5.1.4 Recommendations to close the gaps

Gap 1: lack of continuity of strategic documents

Action (recommendation to close the gap): ensure that strategic documents are prepared on time in order not to have a few years gap between them

Implementation strategy: define project tasks on time, prepare public procurement on time and foresee all the necessary procedures and risks

Timeline: one year before expiration of the actual strategy

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Ministry of the Sea, Transport and Infrastructure

Gap 2: lack of project defining and financing sources availability due to strategy missing

Action (recommendation to close the gap): ensure that strategic documents are up to date in order to enable financing background of the specific projects

Implementation strategy: define project tasks on time, prepare public procurement on time and foresee all the necessary procedures and risks

Timeline: one year before expiration of the actual strategy

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Ministry of the Sea, Transport and Infrastructure

The following table summarizes the gaps identified in (*title of strategy*), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
1	Lack of continuity of strategic documents	Ensure that strategic documents are prepared on time in order not to have a few years gap between them
1	Lack of project defining and financing sources availability due to strategy missing	Ensure that strategic documents are up to date in order to enable financing background of the specific projects

Table 2: RTDS strategy gaps and actions to close them

5.2 Mid-term Development Plan for Inland Waterways and Ports

5.2.1 Current state

Mid-term Development Plan for Inland Waterways and Ports was valid in the period between 2009-2016. The document was adopted by the Croatian Parliament and it was the basis for inland waterways and ports projects generation and financing. New version of the MTDP is under preparation and should be done by the end of the 2022.

The 5 year gap between two MTDP issues caused obstacles when projects were prepared for EU financing, basis had to be found in other strategic documents which are more general or projects should be a kind of, so called, "no regret" projects.

Beside information of the management system for ports and inland waterways, compliance with EU policies, MTDP gave overview of the as-is state of the waterways and ports and of desired state in the, at the time, future period. It gave plan for the maintenance of the inland waterways, for its management and development.

MTDP also gave the plan for the inland ports modernization and development. Having a look back, we can see that some of the projects did not start with their realization, some started but did not finish. It would be good to have a document of a strategic character that could be more "live" and adjustable in accordance with demands, market needs and changes.

5.2.2 Desired state

MTDP should be up to date all the time and adjustable in accordance with needs. It should foresee if some of the projects could not be realized in the future period of time and such projects should not be obstacle to other projects.

5.2.3 Gap identification

- Gap 1: Avoid projects that are obstacle to one another or many other projects
  Level: 2
- Gap 2: Mid term strategic documents should be adjustable to real needs
  Level: 3

5.2.4 Recommendations to close the gaps

Gap 1: avoid projects that are obstacle to one another or many other projects

Action (recommendation to close the gap): define priority projects and try to define are any of those projects and their implementation uncertain and how (risk defining)

Implementation strategy: define straight criteria for projects priorities (maturity of projects etc.)

Timeline: please propose a time period for implementation and completion of each action to close the gap: while preparing Mid-term Plan - 2022

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Ministry of the Sea, Transport and Infrastructure and strategic documents makers

Gap 2: Mid term strategic documents should be adjustable to real needs

Action (recommendation to close the gap): foresee the risks for each project/objective realization, measures to prevent them

Implementation strategy: define the procedure and to make possible for such level documents to change/adjust

Timeline: please propose a time period for implementation and completion of each action to close the gap: while preparing Mid-term Plan - 2022

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Ministry of the Sea, Transport and Infrastructure and strategic documents makers

The following table summarizes the gaps identified in MTDP, as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
2	Avoid projects that are obstacle to one another or many other projects	Define priority projects and try to define are any of those projects and their implementation uncertain and how (risk defining)
3	Mid term strategic documents should be adjustable to real needs	Foresee the risks for each project/objective realization, measures to prevent them

Table 3: MTDP gaps and actions to close them

5.3 National Program for the Railway Infrastructure for the Period 2016-2020

5.3.1 Current state

National Program for the Railway Infrastructure for the Period 2016-2020 (Official Gazette 103/2015) (further: NPRI) is the basic document which defines development priorities, construction, modernization, renewal and maintenance of the railway infrastructure system. NPRI has been adopted in line with TDS. By the NPRI construction, modernization and maintenance plans for the existing railway network are defined as well as priorities and dynamic for the realization and financial means needs and resources for financing.

NSRI gives strategic goals for the railway infrastructure, organization of the railway infrastructure system, as is analysis of the existing system and guidelines for railway infrastructure investments. Within the part: Contracts for the projects preparation and other project documentation needed for the reconstruction and restoration of the railways in Croatia, railway Vinkovci - Vukovar upgrade and electrification is mentioned. This project - railway passes through existing port area in Vukovar port. By the realization of this project 5,8 ha of the port land was excluded from the port area and passenger railway goes through port and divides the port in two parts where connection between the water and port hinterland is complicated.

5.3.2 Desired state

This Program should prepare the basis for the future railways modernization and construction. It should be in line with other transport strategies especially when project from different transport sectors are based partially or in total on the same location.

5.3.3 Gap identification

- Gap 1: overlap of the strategic projects from different transport sectors
  Level: 1

5.3.4 Recommendations to close the gaps

Gap 1: overlap of the strategic projects from different transport sectors

Action (recommendation to close the gap): to strictly define which project are priorities

Implementation strategy: by forming the common board/commission when preparing strategic documents which shall include participants with other transport sectors

Timeline: 2022

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Ministry of the Sea, Transport and Infrastructure

The following table summarizes the gaps identified in NPRI, as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
	Overlap of the strategic projects from different transport sectors	To strictly define which project are priorities

Table 4: NPRI strategy gaps and actions to close them

5.4 Construction and Maintenance of Public Roads Program 2017-2020

5.4.1 Current state

Planing and construction of the public roads in Republic of Croatia is regulated by the Road Law (Official Gazette 84/11, 22/13, 54/13, 148/13, 92/14, 110/19, 144/21) and it is implemented through three levels: long-term - TDS; mid-term: four year Program adopted by the Government and yearly: construction and maintenance plans that should be adopted by the companies which manage road networks.

In the Chapter 4. where main objectives for construction and maintenance of the public roads is described it is mentioned that construction of connection roads to (beside other) inland ports is a way to reach the multimodality and its increase.

Vukovar road bypass is planned in activities that are of interest for the State. At the moment, all transport is going through city center. Plan was to finish the 1st part of the road until the end of 2020. It was not achieved and new plan has not been prepared.

5.4.2 Desired state

To have efficient road infrastructure as connection to the Port of Vukovar.

5.4.3 Gap identification

- Gap 1: long periods for significant road connections realization
  Level: 2

5.4.4 Recommendations to close the gaps

Gap 1: long periods for significant road connections realization

Action (recommendation to close the gap): to recognize the priorities and significance of specific projects which have the influence on multimodal chains

Implementation strategy: by forming the common board/commission when preparing strategic documents which shall include participants with other transport sectors

Timeline: 2022

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Ministry of the Sea, Transport and Infrastructure

The following table summarizes the gaps identified in CMPR, as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
	Long periods for significant road connections realization	To recognize the priorities and significance of specific projects which have the influence on multimodal chains

Table 5: CMPR strategy gaps and actions to close them

5.5 Transport Master Plan of the East Croatia Functional Region

5.5.1 Current state

Common Master plan is prepared for following Counties in the eastern part of Republic of Croatia: Virovitičko-Podravska, Osiječko-Baranjska, Brodsko-Posavska, Požeško-Slavonska and Vukovarsko-Srijemska County. Final version of the document is from 2020.

General objective is to reach the efficient and sustainable transport system which will be suitable for economic development needs and inhabitants on the area of Functional Region East Croatia. The goal is to establish the preconditions for meeting the transport needs and to satisfy the transport needs of the overall transport system. TMPEC is a strategic document which should represent the strategic basis for all future transport projects in order to improve possibility for projects financing. All transport modes are included.

5.5.2 Desired state

To have a Master Plan that is a good basis for development and financing transport projects and infrastructure.

5.5.3 Gap identification

- Gap 1: wrong information regarding inland navigation sector[1]
  Level: 2

5.5.4 Recommendations to close the gaps

Gap 1: wrong information regarding inland navigation sector

Action (recommendation to close the gap): when preparing such documents consult authorities from each specific transport field for correct information

Implementation strategy: define relevant institutions who can participate while document is being prepared

Timeline: when new version is being prepared

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: County responsible for document preparation

The following table summarizes the gaps identified in TMPEC, as well as recommended actions to close those gaps.

[1] TMPEC has wrong information about port area - it says that total area is 8ha (it is 35 ha); other wrong information is that there are three passenger quays in Vukovar - srijem County (there are two).

Gap level	Gap	Action (recommendation) to close the gap
	Wrong information regarding inland navigation sector	When preparing such documents consult authorities from each specific transport field for correct information

Table 6: TMPEC strategy gaps and actions to close them

6 Gap analysis summary

6.1 Gaps, actions to close the gaps and strategy inputs

Below table summarizes the gaps and actions to close the identified gaps.

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
1		RTDS is a document which was valid for the period between 2008-2018 (Official Gazette 65/08). From 2018 and until today, new Strategy has not been adopted. From 2019 all strategic documents considering river transport and ports are under preparation.	It is important for the documents as RTDS to be up to date, not to have such a long gap between one and other for the next period of time. This is important, first of all, from the aspect of financing the projects from the inland navigation sector, projects that are of importance for the inland waterways and ports.	Lack of continuity of strategic documents	Ensure that strategic documents are prepared on time in order not to have a few years gap between them	one year before expiration of the actual strategy
1		RTDS is a document which was valid for the period between 2008-2018 (Official Gazette 65/08). From 2018 and until today, new Strategy has not been adopted.	It is important for the documents as RTDS to be up to date, not to have such a long gap between one and other for the next period of time. This is important, first of all, from the aspect of	Lack of project defining and financing sources availability due to strategy missing	Ensure that strategic documents are up to date in order to enable financing background of the specific projects	one year before expiration of the actual strategy

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
		From 2019 all strategic documents considering river transport and ports are under preparation.	financing the projects from the inland navigation sector, projects that are of importance for the inland waterways and ports.			
2		Mid-term Development Plan for Inland Waterways and Ports was valid in the period between 2009-2016. The document was adopted by the Croatian Parliament and it was the basis for inland waterways and ports projects generation and financing. New version of the MTDP is under preparation and should be done by the end of the 2022.	MTDP should be up to date all the time and adjustable in accordance with needs. It should foresee if some of the projects could not be realized in the future period of time and such projects should not be obstacle to other projects.	Avoid projects that are obstacle to one another or many other projects	Define priority projects and try to define are any of those projects and their implementation uncertain and how (risk defining)	2022
		Mid-term Development Plan for Inland Waterways and Ports was valid in the period	MTDP should be up to date all the time and adjustable in accordance with needs. It	Mid term strategic documents should be adjustable to real needs	Foresee the risks for each project/objective realization, measures to prevent them	2022

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
		between 2009-2016. The document was adopted by the Croatian Parliament and it was the basis for inland waterways and ports projects generation and financing. New version of the MTDP is under preparation and should be done by the end of the 2022.	should foresee if some of the projects could not be realized in the future period of time and such projects should not be obstacle to other projects.			
1		National Program for the Railway Infrastructure for the Period 2016-2020 (Official Gazette 103/2015) (further: NPRI) is the basic document which defines development priorities, construction, modernization, renewal and maintenance of the railway infrastructure system. NPRI has been adopted in line with TDS.	This Program should prepare the basis for the future railways modernization and construction. It should be in line with other transport strategies especially when project from different transport sectors are based partially or in total on the same location.	Overlap of the strategic projects from different transport sectors	To strictly define which project are priorities	2022

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
2		Planing and construction of the public roads in Republic of Croatia is regulated by the Road Law (Official Gazette 84/11, 22/13, 54/13, 148/13, 92/14, 110/19, 144/21) and it is implemented through three levels: long-term - TDS; mid-term: four year Program adopted by the Government and yearly: construction and maintenance plans that should be adopted by the companies which manage road networks.	To have efficient road infrastructure as connection to the port of Vukovar.	Long periods for significant road connections realization	To recognize the priorities and significance of specific projects which have the influence on multimodal chains	2022
2		Common Master plan is prepared for following Counties in the eastern part of Republic of Croatia: Virovitičko-Podravska, Osijek-Baranja, Brodsko-Posavska, Požeško-	To have a Master Plan that is a good basis for development and financing transport projects and infrastructure.	Wrong information regarding inland navigation sector	When preparing such documents consult authorities from each specific transport field for correct information	when new version is being prepared

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
		Slavonska and Vukovarsko-Srijemska County. Final version of the document is from 2020.				

Table 7: Gap analysis summary for Croatia

7 Conclusions

In order to have strategic documents of a good quality it is necessary to establish more efficient procedures for preparation of such documents. Stakeholders of strategic documents have to be identified and they should be involved in the documents preparation in some stage. All strategies are available for public consultations in the time of their preparation, but it is obvious that feedback is poor and not efficient.

When we talk about strategies from the transport field, we have to have in mind that all transport branches are under the same Ministry and for that reason there should not be projects overlapping. There should not be projects which are in strategic documents for many years and they are not implemented and it is uncertain when they will be and, in the same time they represent the obstacle to many other projects.

Strategic documents which are not long-term, should be possible for adjustments or changes. Criteria for projects and priorities should be clearly defined. Same is for risks for their realization.

Regional/local strategic documents have to be prepared in cooperation with institutions from transport sector in order to synchronize priorities with state level strategic documents and to have the correct data.

8 References

- Transport Development Strategy for the period 2017-2030 (Official Gazette 84/17)
- Government Program 2020-2024
- Ministry of Sea, Transport and Infrastructure Strategic Plan 2020-2022
- River Transport Development Strategy (Official Gazette 65/2008)
- Mid-term Development Plan for Inland Waterways and Ports 2009-2016
- National Program for the Railway Infrastructure for the Period 2016-2020 (Official Gazette 103/2015)
- Construction and Maintenance of Public Roads Program 2017-2020 (Official Gazette 47/2017)
- Transport Master Plan of the East Croatia Functional Region

Interreg
EUROPEAN UNION
Danube Transnational Programme
DIONYSUS

Integrating Danube Region into Smart & Sustainable Multi-modal & Intermodal Transport Chains

Analysis of European & National Transport Policies, Strategies & Programs with regard to the Danube Ports

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Executive summary

Transport policy in the Republic of Serbia is characterised by developing infrastructure network especially for road transport and intensively developing inland ports infrastructure in the last few years.

There are development strategies for each transport model. For example, inland water transport policy is largely based on a Strategy on waterborne transport development of the Republic of Serbia, 2015-2025 which was adopted in January 2015.

One of the disadvantages is that many Serbian transport related policy documents are not fully aligned with other existing documents or legislation and many of them do not take into account the implications of their own provisions on the functioning and development of other related transport modes or initiatives and activities.

For the purposes of this report, in order to identify gaps in selected transport policies in the Republic of Serbia, the PGA team selected three relevant documents and looked for possible gaps that could have a negative impact on ports in different aspects.

Gaps were identified and analysed in:

- Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia 2008-2015
- Strategy on waterborne transport development of the Republic of Serbia, 2015-2025
- National Program for the Development of Railway Infrastructure 2017-2021

Identified gaps vary in their scope and nature from one policy document to another. Some of the gaps are outdated transport strategies, insufficient emphasis on the importance of the connection between different modes of transport, insufficient attention to ports as carriers and drivers of economic development. In some of them inland ports were not mentioned at all, which is completely unacceptable.

1 Table of Figures

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3 Abbreviations

Abbreviation	Explanation
IWT	Inland Water Transport
PGA	Port Governance Agency
EWBJF	European Western Balkan Joint Fund
EU	European Union
TEN-T	Trans-European Transport Network
RS	Republic of Serbia

4 Introduction

Serbia is not EU Member State. The European Council granted the status of candidate country to Serbia on March 1, 2012, based on the Committee opinion on Serbia's application for membership adopted on October 12, 2011. The Council concluded on December 5, 2011 that the European Council would consider opening accession negotiations in accordance with common practice when the European Commission assesses that Serbia achieved the required degree of harmonisation with the membership criteria.

Given the fact that the Republic of Serbia currently holds the status of candidate country for full membership in the EU, the transport policy of the Republic of Serbia is determined by the goal of economic and social development and harmonisation with the EU transport policy. By following the path of EU integration, in the previous years, the significant effort has been dedicated to the harmonisation of the national legislation in the field of transport with the EU legislation.

Serbia has been engaged in creation of preconditions for access to pre-accession funds of the European Union. PGA participates in working groups within the line ministries dealing with these issues, government agencies, chambers of commerce, etc.

The transport sector is expected to play a critical role in Serbia's accession process to the European Union, first - in geopolitical terms as it is at the crossroads in South East Europe, second - because an efficient transport sector can stimulate economic development, and third - it is crucial for integration into the wider European economy. The transport infrastructure is a network along which economic growth can be promoted; it should also lead to greater mobility of people and the improved movement of goods both internally and to neighbouring countries and beyond.

Serbia's transport infrastructure is being modernised to comply with international design standards so that it is consistent with the Directives and Regulations laid down in the transport acquis. The modernization is supported by funds from different international financial institutions as well as from national budget and reflects the priorities in The National Strategy for the Development of the Rail, Road, Water, Air and Intermodal Transport (2008-2015) and in the Development Strategy on Waterborne Transport of the Republic of Serbia 2015-2025.

The focus point in this Development Strategy is the Danube River, representing one of the major transport axes in Europe (former TEN-T Corridor VII, now Rhine-Danube Corridor). The Serbian stretch of the Danube River has a total length of 588 km, from the Serbian-Hungarian border to the Serbian-Romanian-Bulgarian border. Along with the Danube, Serbian Inland Waterway Network also considers Sava and Tisa rivers.

Since 2007-2008 several sub-sectoral strategies have been produced in the transport sector in the Republic of Serbia, not always in a coordinated or integrated manner.

In 2015, a strategy on waterborne transport development of the Republic of Serbia, 2015-2025 was adopted, dealing with broad issues ranging from renewing and

modernising the national fleet, to developing the economic potential of Serbian ports and harbours, and developing the navigational standard of national inland waterways.

For railways, the Railway Master Plan was made with the financial assistance of the European Western Balkan Joint Fund (EWBJF) under the Western Balkan Investment Framework in 2012, for the period from 2012 to 2021. This document includes 24 railway projects with technical reports.

In 2017, the Parliament adopted the National Program for the Development of Railway Infrastructure 2017-2021. The program deals with infrastructure gaps and identifies priority projects for both maintenance and reconstruction/new construction.

All these documents have filled transport policy gaps and provided strategic direction at a relatively granular level, but Serbia is missing an overarching strategic framework which will harmonise regulative and define directions of development for each transport sector.

The coordination between strategies of different transport modes is important for the overall transport development in the Republic of Serbia, especially, for the future development of inland ports.

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5 Strategies with existing or potential influence on ports

Transport development strategies, policies and programmes identified to have substantial or more than marginal influence on ports are listed in the following table.

Economic development strategies, policies and programmes	Mentioning ports	Not mentioning ports, but could or should affect ports	Low influence on ports	Medium influence on ports	Strong influence on ports
Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia 2008-2015 1	X				X
Strategy on Waterborne Transport Development of the Republic of Serbia, 2015 -2025 2	X				X
Railway Master Plan 3		X			

Table 1: Listing of transport development strategies and their influence on ports

5.1 Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia 2008 - 2015

5.1.1 Current state

Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia from 2008 until 2015 identifies the condition in the transport sector, puts forward a concept of the development of infrastructure and transport, defines goals and objectives of transport system development and Action Plan for their implementation, bearing in mind a need for a sustainable development of the transport in the Republic of Serbia. Guidelines for such development have been drawn up on the level of the whole system and are based on safety and intermodality principles, the application of new technologies, complementary use of all transport modes and, above all, on the rational exploitation of available capacities and resources in the country.

This strategy is goal oriented and based on the vision for 2015, taking into account the social development, determination to accession to the European Union, sustainable development of the transport system and stable institutions.

The Strategy defines the steps on this path and identifies priorities.

The Strategy gives the guidelines for decision making in the transport sector and the planning document which comprises operation of all modes of transport. It is the source of information on conditions, problems, scenarios, general goals, goals according to transport modes and certain measures in the transport sector, channels and gives information to economy and interested citizens and it lays down guidelines for decision making to all public administration bodies and bodies on local level.[1]

Phases of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia are: restoration, reconstruction and modernization and construction. The speed of the realisation of these measures varies from one transport mode to the other and depends on political interests of the European Union and other members of the international community, International financing institutions, on financial capability of the state as well as the development of the political situation in the Republic of Serbia.

Also, according to the progress report 2019, Serbia needs to „revise its transport strategy in line with EU guidelines for the development of trans-European transport networks" and „strengthen administrative capacities for transposing, implementing, and enforcing the Trans-European networks acquis". [2]

According the Strategy specific goals of the IWW sector are: gradual development of IWW and ports (freight-transport terminals) on Danube navigable network according to the AGN agreement, competitive inclusion of IWW infrastructure in intermodal transport network, organisation of IWW in compliance with international classification of navigability and supporting the development of domestic industry, tourism and trade.

5.1.2 Desired state

Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia have to be updated because this Strategy is outdated.

New version Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia as roof transport document should make sure that:

- all types of transport models and infrastructure projects will be related;
- focus will be on digitalization, multimodality, improvement of logistic services and transport sector performances;
- deepening regional integration;
- guidelines for strengthening administrative capacity;

[1] STRATEGY OF RAILWAY, ROAD, INLAND WATERWAY, AIR AND INTERMODAL TRANSPORT DEVELOPMENT IN THE REPUBLIC OF SERBIA, 2008 - 2015

[2] Ministry of European Integration Government of the Republic of Serbia, retrieved from http://www.mei.gov.rs/eng/documents/eu-documents/annual-progress-reports-of-the-european-commision-for-serbia, on July 5th, 2019.

- implementation of soft measures;
- harmonisation with national and international (EU) legal framework
- focus will be on the inland waterway transport, together with efficiency, sustainability, and environmental concerns
- functional/operational links between different transport models (railway and road), and we want to ensure that the road or rail infrastructure is sufficient to accommodate expected traffic to/from ports.
- better connection with the countries of the region.

Objectives of the desired state are:

- The primary objective is sustainable, well-functioning transport systems aiming to contribute to expanded, improved and safer transport networks, which will enhance transport services, attract new investments to the poorer regions, improve the quality of regional life, foster innovation, promote trade and contribute to the improvement of relations with neighbouring countries.[3]
- More efficient implementation of investments in development projects and more intensive development of multimodal transport;
- Implementation of soft measures helps with aligning and simplifying border crossing procedures, railway reforms, information systems, road safety and maintenance schemes, railway unbundling and third party access
- Faster integration of RS into the EU and fulfilment of conditions from the progress report of the European Commission for Serbia 2019;
- In this way to ensure functional and operational coordination between logistic zones, development strategies and port strategies and ensure sufficient capacity of road/rail links to ports;
- Deepening regional integration should contribute to political and institutional stability;
- The regional approach also allows joint reforms, such as the interconnection of information systems, the alignment of documentation, standards, and guarantee systems, and the adoption of cross-border agreements allowing free passage.

5.1.3 Gap identification

On the basis of the differences between the current and desired state, the following gaps in the strategy to guide the development of the transport sector in Serbia are identified:

[3] http://www.koridorisrbije.rs/

Gap 1: Lack of coherent and relevant policy or strategy to guide the development of the transport sector in Serbia (outdated Strategy).

Level 1

Gap 2: Insufficient integration between the individual transport modes (railway, road, inland waterway)

Level 1

Gap 4 Non harmonised national and international (EU) legal framework

Level 2

Gap 5 There is no concept of regional development and connection with trading partner countries.

Level 2

5.1.4 Recommendations to close the gaps

Gap 1: Lack coherent and relevant policy or strategy to guide the development of the transport sector in Serbia.

Recommendation: Republic of Serbia needs to develop and adopt a new transport Strategy.

Implementation strategy: organise coordination body, consulting relevant expertise and prepare plan project prioritisation.

Time line: 2023-2030

Stakeholders: Ministry of Construction, Transport and Infrastructure, Ministry of Finance, PGA, relevant transport companies such as JSC Serbian Railways, Corridors of Serbia LTD, Directorate for Inland Waterways and regulations bodies in the Republic of Serbia.

Gap 2: Insufficient integration between the individual transport modes

Recommendation: Form a cooperation committee, intersectoral coordination board or any other formal cooperation body in order to avoid any conflict of interests and to coordinate strategies and actions and acknowledge this need in relevant legislation.

Implementation strategy: organise multilateral consultation of rail and port organisations, agree on the cooperation topics and formalise the coordination body.

Timeline: 2023-2030

Stakeholders: Ministry of Construction, Transport and Infrastructure, Ministry of Finance, PGA, relevant transport companies such as JSC Serbian Railways, Corridors of Serbia LTD and regulations bodies in the Republic of Serbia.

Gap 3 Non harmonised national and international (EU) legal framework

Recommendation: Suitable framework must be established to take care of European tasks for traffic and transport.

Implementation strategy: Organise experts from different transport models which make analysis relevant to the EU legal framework and give recommendations for harmonisation with national legal framework.

Time line: 2023-2030

Stakeholders: Ministry of Construction, Transport and Infrastructure, Ministry of Finance, PGA, relevant transport companies such as JSC Serbian Railways, Corridors of Serbia LTD and regulations bodies in the Republic of Serbia, relevant EU bodies.

Gap 4 There is no concept of regional development and connection with trading partner countries.

Recommendation: Create a concept of regional development and connect with trading partner countries.

Implementation strategy: Establish a national coordination body that will create regional cooperation with trading partner countries.

Time line: 2023-2030

Participants (stakeholders): Ministry of Construction, Transport and Infrastructure, Ministry of Finance, PGA, relevant transport companies such as JSC Serbian Railways, Corridors of Serbia LTD and regulations bodies in the Republic of Serbia, relevant EU bodies and trading partner countries.

The following table summarizes the gaps identified in (*title of strategy*), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
1	Lack of coherent and relevant policy or strategy to guide the development of the transport sector in Serbia	The Republic of Serbia needs to develop and adopt a new transport Strategy.
1	Insufficient integration between the individual transport modes	Form a cooperation committee, intersectoral coordination board or any other formal cooperation body in order to avoid any conflict of interests and to

		coordinate strategies and actions and acknowledge this need in relevant legislation
2	Non harmonised national and international (EU) legal framework	Suitable framework must be established to take care of European tasks for traffic and transport
2	There is no concept of regional development and connection with trading partner countries	Create a concept of regional development and connect with trading partner countries

Table 2: Gaps Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia and actions to close them

5.2 Strategy on Development of Waterborne Transport of the Republic of Serbia for the period from 2015 to 2025

Strategy on Development of Waterborne Transport of the Republic of Serbia for the period from 2015 to 2025 lists the most important investments that are defined and initialised including: construction and reconstruction of Serbian ports, eliminating all critical sectors for navigation on the waterway network, further improvement of intelligent waterway transport systems.

5.2.1 Current state

In 2015, a strategy on waterborne transport development of the Republic of Serbia, 2015-2025 was adopted, dealing with broad issues ranging from renewing and modernising the national fleet to developing the economic potential of Serbian ports and harbours, and developing the navigational standard of international and national inland waterways. Action plan for the Strategy has been elaborated and priority projects and activities are set in order to reach targeted values.

The Development Strategy on Waterborne Transport for the Republic of Serbia 2015-2025 is based on the principles of safety, inter-modality, application of new technologies, complementary use of different transport modes and rational use of available capacities and resources in Serbia. Serbia is currently investing efforts to modernise transport infrastructure and to introduce contemporary standards in all the segments of the transport system. The strategy aims at having the Serbian fluvial infrastructure comply with the overall EU transport policy.

The transport sector naturally includes the inland waterways (IWW), of which Serbia has more than 1600 km split among several categories. The Serbian Government has

defined priorities to improve the functioning of the transport system as a generator for the economic and social development. The system's needs are underlined from the national strategic and planning documents as well as from EU accession requirements.

5.2.2 Desired state

Any future revision of the Strategy on Development of Waterborne Transport of the Republic of Serbia or any new version of this document should aim to:

- Increase the traffic of local and foreign vessels (including transit, import and export) through the IWW network of Serbia;
- Harmonise international and national IWW regulations by implementing simplified administrative procedures (including border crossings), ensuring the safety of navigation through compliance with internationally applicable laws and standards by providing a network of IWW and ports of the highest quality;
- Duly recognise Inland port as transport network modes that have major roles as logistic centres of Serbia and intra-European and international supply chains;
- Harvest the benefits of synergies between ports and logistic and/industrial zones by locating the latter within the existing port areas or in their immediate vicinity;
- Focus further port development initiative on smart ports and more digitization, automation and automation of port management, port infrastructure and port operations.

Objectives of the desired state are:

- Increased volume of traffic on rivers and thus better utilisation of port transshipment capacities and rapid return of invested funds in the modernization of port infrastructure;
- Simplified administrative procedures, safe navigation without unnecessary delays;
- Final recognition of inland ports as efficient and reliable transport network elements where not only various transport modes meet, but where value is added not just to cargo but to overall supply chains;
- Facilitation of the spatial concentration of port related activities, logistic activities and industrial activities wherever physically possible;
- Increase the uptake of innovations in traditionally novelty-reluctant inland ports for the purposes of increase of reliability and efficiency of planning and operations.

5.2.3 Gap identification

On the basis of the differences between the current and desired state, the following gaps in the Strategy on Development of Waterborne Transport of the Republic of Serbia for the period from 2015 to 2025 are identified:

Gap 1: lack of information on the availability of transhipment capacities in ports and insufficient information on the benefits of water transport.

Level: 2

Gap 2:. lack of harmonised international administrative procedures, including border crossing, and corresponding national/international IWW regulations for implementation of the digitalisation of these processes.

Level: 1

Gap 3:. lack of awareness that inland ports are crucially important elements of the transport network.

Level: 1

Gap 4: lack of intersectoral coordination and cooperation in port and spatial planning

Level 1

Gap 5: lack of attention to automation in inland port operations.

Level: 2

....

5.2.4 Recommendations to close the gaps

Gap 1: lack of information on the availability of transhipment capacities in ports and insufficient information on water transport possibilities.

Recommendation: present and promote ports on inland waterways in the Republic of Serbia on international level and educate potential domestic economic entities.

Implementation strategy: participation in international projects and policy making and transport network events and organise existing and/or newly formed bodies and organisations such as port associations and/or business associations and educate potential port users.

Timeline: 2023 - 2030.

Stakeholders: ministries in charge of transport, port authorities, port experts, relevant EU bodies, PGA, port operators, port associations.

Gap 2: lack of harmonised international administrative procedures, including border crossing, and corresponding national/international IWW regulations for implementation of the digitalisation of these processes.

Recommendation: Harmonisation of border crossing procedures and if necessary amend national regulations to implement the digitalisation of these processes.

Implementation strategy: IWW experts from Danube riparian countries to analyse relevant EU/national legal framework and give recommendations for harmonisation of national IWW regulations by implementing simplified administrative procedures.

Timeline: 2023 - 2030.

Stakeholders: ministries in charge of transport, port authorities, port operators, port associations, port experts, relevant EU bodies.

Gap 3: lack of awareness that inland ports are crucially important elements of the transport network.

Recommendation: lobbying for interests of ports with relevant institutions of the EU, supported by various impact assessments and other supportive studies on inland ports.

Implementation strategy: organise existing and/or newly formed lobbying bodies such as port associations and/or business associations, commission the targeted port studies, and influence the policy making processes.

Timeline: 2023 - 2030.

Stakeholders: ministries in charge of transport, port authorities, port operators, port associations, port experts, relevant EU bodies.

Gap 4: lack of intersectoral coordination and cooperation in port and spatial planning.

Recommendation: form a permanent body/commission/board of relevant decision-making organisations that will coordinate their activities and safeguard mutual interests in spatial planning and strategic economic/industrial planning in relevant transport strategies and policies.

Implementation strategy: appropriate decisions should be made and, if necessary, regulatory framework adjusted so as to allow the formation of a joint body involving all necessary authorities in charge of port planning, spatial planning, industrial and logistics planning, as well as infrastructure managers or road and rail infrastructure. Thereafter, exert joint and coordinated influence on policy makers and decision makers while drafting new transport and economic policies or take part in adapting of the existing ones.

Timeline: 09/2022 – 12/2030 or until achieved.

Stakeholders: ministries in charge of transport, port authorities, port operators, port associations, port experts, logistic zones authorities, industrial companies, ministries of economy and/or finance, relevant EU bodies.

Gap 5: lack of attention to automation in inland port operations.

Recommendation: establish an appropriate funding mechanism or adapt the existing ones so as to include and prioritise research and innovation activities in the automation of port operations and get involved in policy making processes.

Implementation strategy: discuss the options of including the topic into adequate financing instruments with relevant EU bodies, present the updated needs of port industry and the needs of port users, proving that the targeted innovations will bring benefits to all parties involved in entire supply chains and that it will contribute to the overall intentions of greening the port operations. Make sure that overcoming this gap according to the desired state is embedded into relevant new policies and strategies.

Timeline: 2023 – 2030 or until achieved.

Stakeholders: ministries in charge of transport, port authorities, port operators, port associations, port experts, cargo handling equipment manufacturers, universities, relevant EU bodies.

The following table summarises the gaps identified in (*title of strategy*), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
2	lack of information on the availability of transhipment capacities in ports and insufficient information on the benefits of water transport	present and promote ports on inland waterways in the Republic of Serbia on international level and educate potential domestic economic entities.
1	lack of harmonised international and national IWW regulations by implementing simplified administrative procedures	organise experts from different transport models which make analysis relevant to the EU legal framework and give recommendations for harmonisation of national IWW regulations by implementing simplified administrative procedures.
1	lack of awareness that inland ports are crucially important elements of transport network	lobbying for interests of ports with relevant institutions of the EU, supported by various impact assessments and other supportive studies on inland ports

1	lack of intersectoral coordination and cooperation in port and spatial planning	form a permanent body/commission/board of relevant decision-making organisations that will coordinate their activities and safeguard mutual interests in spatial planning and strategic economic/industrial planning in relevant transport strategies and policies.
2	lack of attention to automation in inland port operations	establish an appropriate funding mechanism or adapt the existing ones so as to include and prioritise research and innovation activities in the automation of port operations and get involved in policy making processes

Table 3: Strategy on Development of Waterborne Transport of the Republic of Serbia for the period from 2015 to 2025 gaps and actions to close them

5.3 National Program for public rail infrastructure

5.3.1 Current state

In 2017, the Parliament adopted the National Program for the Development of Railway Infrastructure 2017-2021. The program deals with infrastructure gaps and identifies priority projects for both maintenance and reconstruction/new construction.

The National Program for the railway infrastructure contains:

1. the existing characteristics and condition of the railway infrastructure of the Republic of Serbia;

2. strategy for construction, reconstruction and maintenance of the railway infrastructure;

3. development components in the construction of the new infrastructure capacities of special significance for the Republic of Serbia;

4. defining of the structure, time schedule for realisation of priorities, level and sources of the financial assets needed for completion of the National Program activities.

The National Program is passed for a five-year period.

Based on the National Program, the Infrastructure Manager prepares the annual program for construction, reconstruction and maintenance of the railway infrastructure, organisation and regulation of the railway traffic.

In the National Railway Infrastructure Program, ports are not mentioned in any way, regardless of the extremely great importance of the connection between the port and railway infrastructure.

The National Railway Infrastructure Program does not take into account the forecasted increase of cargo volumes in Serbian ports, which may create bottlenecks.

We want to achieve cargo consolidation and spatial concentration with merging the logistic zone with ports where possible (or to provide functional/operational links between them).

Also, we want to ensure that the rail infrastructure be sufficient to accommodate expected traffic to/from ports.

That is important to port as it could cause cargo deconcentration, dispersion, while rail capacity could cause congestion in ports and consequent delays.

5.3.2 Desired state

Any future revision of the National Program for the Development of Railway Infrastructure of the Republic of Serbia or any new version of this document should aim to:

to ensure functional and operational coordination between development strategies for railway infrastructure and port strategy;

to ensure sufficient capacity of rail links to river ports in the Republic of Serbia;

to development plans for railway infrastructure will be focus on connecting ports to the railway network.

Objectives of the desired state are:

All river ports in RS connected to the national railway network;

Developed and modernized railway infrastructure in ports;

5.3.3 Gap identification

On the basis of the differences between the current and desired state, the following gaps in the National Railway Infrastructure Program are identified:

Gap 1: The National Program for the Development of Railway Infrastructure is outdated;

Level: 2

Gap 2: Lack of intersectoral coordination between strategies in water and railway transport;

Level: 1

Gap 3: Lack of connections or rail infrastructure capacities in river ports in the Republic of Serbia.

Level: 1

5.3.4 Recommendations to close the gaps

Gap 1: The Outdated National Program for the Development of Railway Infrastructure.

Recommendation: Republic of Serbia needs to develop and adopt a new National Program for the Development of Railway Infrastructure.

Implementation strategy: organize coordination body, consult relevant expertise and prepare new National Program for the Development of Railway Infrastructure.

Time line: 2023-2030

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Ministry of Construction, Transport and Infrastructure, Ministry of Finance, relevant transport companies such as JSC Serbian Railways, PGA and regulations bodies in the Republic of Serbia.

Gap 2: Lack of intersectoral coordination between strategies in water and railway transport.

Recommendation: secure that inland ports are clearly identified and mentioned in the new regulation for railway transport.

Implementation strategy: organize coordination body, consult relevant expertise and prepare plan for project prioritisation.

Time line: 2023-2030

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Ministry of Construction, Transport and Infrastructure, Ministry of Finance, relevant transport companies such as JSC Serbian Railways, PGA and regulations bodies in the Republic of Serbia.

Gap 3: Lack of connections or rail infrastructures capacities in river ports in the Republic of Serbia.

Recommendation: get involved in the elaboration of the new transport strategies in the early phase and/or during the public consultations.

Implementation strategy: organise coordination body, consult relevant expertise and prepare development plan for project prioritisation in ports.

Time line: 2023-2030

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Ministry of Construction, Transport and Infrastructure,

Ministry of Finance, relevant transport companies such as JSC Serbian Railways, PGA and regulations bodies in the Republic of Serbia.

The following table summarizes the gaps identified in (*title of strategy*), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
2	The Outdated National Program for the Development of Railway Infrastructure	Republic of Serbia needs to develop and adopt a new National Program for the Development of Railway Infrastructure
1	Lack of intersectoral coordination between strategies in water and railway transport.	Secure that inland ports are clearly identified and mentioned in the new regulation for railway transport.
1	Lack of connections or rail infrastructures capacities in river ports in the Republic of Serbia	Get involved in the elaboration of the new transport strategies in the early phase and/or during the public consultations.

Table 4: National Program for the Development of Railway Infrastructure 2017-2021 gaps and actions to close them

6 Gap analysis summary

6.1 Gaps, actions to close the gaps and strategy inputs

Below table summarizes the gaps and actions to close the identified gaps.

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia 2008-2015						
	The primary objective is sustainable, well-functioning transport systems aiming to contribute to expanded, improved and safer transport networks, which will enhance transport services, attract new investments More efficient implementation of investments in development projects and more intensive development of multimodal transport; Faster integration of RS into the EU and fulfilment of conditions from the progress report of the European Commission	Strategy is outdated Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia is not harmonized with national and international (EU) legal framework	Develop and adopt a new transport Strategy All types of transport models and infrastructure projects will be related Harmonization with national and international (EU) legal framework	Gap 1 Lack of coherent and relevant policy or strategy to guide the development of the transport sector in Serbia Gap 2 Insufficient integration between the individual transport modes Gap 3 Non harmonized national and international (EU) legal framework Gap 4 There is no concept of regional development and connection with trading partner countries	The Republic of Serbia needs to develop and adopt a new transport Strategy Form a cooperation committee, intersectoral coordination board or any other formal cooperation body in order to avoid any conflict of interests and to coordinate strategies and actions and acknowledge this need in relevant legislation Suitable framework must be established to take care of European tasks for traffic and transport Create a concept of regional development and connect with trading	2023

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	for Serbia 2019				partner countries	
Strategy on Development of Waterborne Transport of the Republic of Serbia for the period from 2015 to 2025						
	Increased volume of traffic on rivers and thus better utilisation of port transshipment capacities and rapid return of invested funds in the modernization of port infrastructure; Simplified administrative procedures, safe navigation without unnecessary delays; Final recognition of inland ports as efficient and reliable transport network elements where not only various	The strategy deals with the development of the economic potential of Serbian ports and the development of navigation standards for international and national inland waterways. Intensive development of water transport in RS from 2015 until today indicates the need to harmonize international and national IVV regulations, implement joint administrative procedures, recognise inland ports as transport network modes that have major roles as logistic centres of Serbia and intra-European and international supply chains.	Increase the traffic of local and foreign vessels (including transit, import and export) through the IWW network of Serbia; Harmonise international and national IWW regulations by implementing simplified administrative procedures (including border crossings), ensuring the safety of navigation through compliance with internationally applicable laws and standards by providing a network of IWW and ports of the highest quality;	Gap 1 Lack of information on the availability of transhipment capacities in ports and insufficient information on the benefits of water transport; Gap 2 Lack of harmonized international and national IWW regulations by implementing simplified administrative procedures Gap 3 lack of awareness that inland ports are crucially important elements of transport network Gap 4	Present and promote ports on inland waterways in the Republic of Serbia on international level and educate potential domestic economic entities; Organize experts from different transport models which make analysis to the relevant EU legal framework and give recommendations for harmonization of national IWW regulations by implementing simplified administrative procedures; Lobbying for interests of ports with relevant institutions of the EU, supported by various impact assessments	2023

	transport modes meet, but where value is added not just to cargo but to overall supply chains; Facilitation of the spatial concentration of port related activities, logistic activities and industrial activities wherever physically possible; Increase the uptake of innovations in traditionally novelty-reluctant inland ports for the purposes of increase of reliability and efficiency of planning and operations.	There is no development initiative on smart ports, more digitization and automation is needed in inland ports.	Duly recognise Inland port as transport network modes that have major roles as logistic centres of Serbia and intra-European and international supply chains; Harvest the benefits of synergies between ports and logistic and/industrial zones by locating the latter within the existing port areas or in their immediate vicinity; Focus further port development initiative on smart ports and more digitization and automation of port management, port infrastructure and port operations.	Lack of intersectoral coordination and cooperation in port and spatial planning Gap 5 Lack of attention to automation in inland port operations	and other supportive studies on inland ports Form a permanent body/commission/board of relevant decision-making organisations that will coordinate their activities and safeguard mutual interests in spatial planning and strategic economic/industrial planning in relevant transport strategies and policies; Establish an appropriate funding mechanism or adapt the existing ones so as to include and prioritise research and innovation activities in the automation of port operations and get involved in policy making processes.	
National Program for public rail infrastructure						
	All river ports in RS to be connected to the national railway network; Develop and modernize railway	In the National Railway Infrastructure Program, ports are not mentioned, regardless of the extremely great importance of the connection	Ensure functional and operational coordination between development strategies for railway infrastructure and port strategy;	Gap 1 The Outdated National Program for the Development of Railway Infrastructure; Gap 2	Republic of Serbia needs to develop and adopt a new National Program for the Development of Railway Infrastructure;	

	infrastructure in ports;	between the port and railway infrastructure. The National Railway Infrastructure Program does not take into account the forecasted increase of cargo volumes in Serbian ports, which may create bottlenecks	Ensure sufficient capacity of rail links to river ports in the Republic of Serbia; Development plans for railway infrastructure will be focused on connecting ports to the railway network.	Lack of intersectoral coordination between strategies in water and railway transport Gap 3 Lack of connections or rail infrastructures capacities in river ports in the Republic of Serbia	Secure that inland ports are clearly identified and mentioned in the new regulation for railway transport. Get involved in the elaboration of the new transport strategies in the early phase and/or during the public consultations.	

Table 5: Gap analysis summary for Republic of Serbia

7 Conclusions

Efficient and safe transport infrastructure enables productivity growth, facilitates and encourages human mobility and goods, reduces traffic isolation and creates a precondition for balanced regional development, attracts international transit flows, additional investments, international trade, increases the employment of the population, etc.

There is insufficient integration between the individual transport modes, each having their own strategy, but with little focus on multimodality, improvement of logistic services and service sector performances.

Of the three considered, two strategies are outdated, while the existing Strategy on Development of Waterborne Transport has filled gaps in policy and provided strategic direction at a relatively granular level, further alignment with EU transport policy is needed, related to harmonization of administrative procedures, smart port development, automation...

Serbia is missing an overarching framework to assess the 'big picture' trade-offs and prioritize different modal interventions on that basis and mechanisms to assess and adjust implementation, in an integrated manner.

Serbia should adopt a national multimodal strategy to guide the development of the transport sector. National multimodal strategy will contribute to expanded, improved and safer transport networks, which will enhance transport services, attract new investments.

Revision or development of the new National Transport Strategy offers a real opportunity to make Serbian Transport Network fit for the future, and for the development infrastructure of the inland ports to be harmonized with the development of other transport models.

It is important to implement technical standards and soft measures such as aligning and simplifying border crossing procedures, railway reforms, information systems, road safety and maintenance schemes, railway unbundling and third party access.

8 References

Strategy of railway, road, inland waterway, air and intermodal transport development in the Republic of Serbia 2008-2015

https://www.putevi-srbije.rs/images/pdf/strategija/Strategijatransport_eng.pdf

Strategy on waterborne transport development of the Republic of Serbia, 2015-2025

Strategy on waterborne transport development of the Republic of Serbia, 2015 - 2025 (aul.gov.rs)

National Program for the Development of Railway Infrastructure 2017-2021
(*The Official Gazette of the Republic of Serbia*, No. 53/17),

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Danube Transnational Programme
DIONYSUS

Integrating Danube Region into Smart & Sustainable Multi-modal & Intermodal Transport Chains

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Table of Contents

Executive summary

The current report provides an analysis of the existing European and national transport policies, strategies and programmes that have impact on Danube ports in Bulgaria. In the process of the report's creation a diverse set of documents was examined, including programmes for the development of different transportation modes and of the sector as a whole, general strategies for the country's development which have transport as one of their topics, strategies for the protection of the environment, spatial plans etc.

The report starts with an introduction that gives an overall assessment of Bulgaria's policies with any significance for transport development whatsoever. Then the document briefly analyses the strategies with an explicit focus on the sector, including the Strategy for the Development of Road Infrastructure 2016 – 2022, the Programme for the Development and Exploitation of Railway Infrastructure 2019 – 2023, the Strategy for Maritime Safety and Protection of the Environment from Ship-source Pollution, the Maritime Spatial Plan of the Republic of Bulgaria 2021 – 2035 and the National Plan for the Development of Combined Transport in the Republic of Bulgaria for the period until 2030.

Further, the Integrated Transport Strategy for the period until 2030 and the Transport Connectivity programme 2021 – 2027 are selected for more detailed examination based on their scope, horizon, and significant relevance to port activities. Each of the two documents is then studied thoroughly in its respective subchapter, where its main features are explained, and a comparison is given between the current and the desired state of the strategy where the most significant gaps between the two are being identified and examined. Each subchapter ends with recommendations on how to close the existing gaps.

The **Integrated Transport Strategy for the period until 2030** represents a comprehensive plan for sustainable development of Bulgaria's transport system and a framework for investments in the sector. Our analysis showed that the most significant gaps in the strategy are the lack of incentives for construction and development of river port facilities, and insufficient measures in support of road and railroad infrastructure in the areas of ports. To close these we recommended: concrete measures for the development of facilities in the ports of Vidin and Silistra; modernization and development of the network of lower class roads in all regions along the Danube river and construction of the Ruse – Veliko Tarnovo motorway; construction of a railway connection with the town of Tutrakan.

The **Transport Connectivity programme 2021 – 2027** is one of Bulgaria's operational programmes which determines the country's policies regarding the usage of EU budget for investments in the improvement of the transport sector. The gaps we

identified in this document were insufficient support for the development of road and railroad infrastructure in river port areas. To close them we suggested modernization and rehabilitation of railway stations in port cities and of the rail lines Vidin – Sofia, Ruse – Gorna Oryahovitsa and Ruse – Varna, as well as rehabilitation of first, second and third class roads in the regions of Vidin, Montana and Vratsa.

Last, the report provides a table that summarizes all the important information regarding the examined documents and ends with conclusions on the government's transport programme and its level of commitment in regard to port development.

1 Table of Tables

2 Abbreviations

Abbreviation	Explanation
IMO	International Maritime Organization
ITS	Integrated Transport Strategy for the period until 2030
OPTTI	Operational Programme Transport and Transport Infrastructure 2014 – 2020
PDERI	Programme for the Development and Exploitation of Railway Infrastructure 2019 – 2023
SDRI	Strategy for the Development of Road Infrastructure 2016 – 2022
SMSPESP	Strategy for Maritime Safety and Protection of the Environment from Ship-source Pollution
TCP	Transport Connectivity programme 2021 – 2027
TEN-T	Trans-European Transport Network

3 Introduction

Currently Bulgaria is administered by a caretaker government which has limited powers regarding the country's governing and is almost entirely focused on organizing parliamentary and presidential elections, and facilitating the transition of power to the next regular executive authority. Nevertheless, strategic policies are based on long-term engagements, and processes regarding their development and implementation are not influenced by transitory circumstances.

The Ministry of Transport, Information Technology and Communications, and its affiliated institutions are the main state entities responsible for the government's policies in the field of transport. The most important transport strategies with relevance to the upcoming programming period are the Integrated Transport Strategy for the period until 2030 and the Transport Connectivity programme 2021 – 2027. Some other documents with focus on the subject are the Strategy for the Development of Road Infrastructure 2016 – 2022, the National Strategy for Road Safety 2021 – 2030, the Programme for the Development and Exploitation of Railway Infrastructure 2019 - 2023, the Strategy for Maritime Safety and Protection of the Environment from Ship-source Pollution, and the Maritime Spatial Plan of the Republic of Bulgaria 2021 – 2035.

Other strategies that are not explicitly on the topic of transport, but have certain or significant relevance to it, are the Regional Development Programme 2021 – 2027, the Strategic Plan for Agricultural and Rural Development, the National Recovery and Resilience Plan of the Republic of Bulgaria, The National Development Programme Bulgaria 2030, and the Interreg VI-A Romania – Bulgaria Programme. All of these documents (currently in the phase of preparation) consist of certain sections that are focused on infrastructure development and connectivity.

In general, Bulgarian strategic documents in regard to the transport sector are coherent and cover the most important components in this area. The need for intermodality and coordination between strategies for different transport modes is relatively well-addressed. However, waterway transport is to some extent underrepresented. This negative tendency is further analyzed in the report.

4 Strategies with existing or potential influence on ports

As mentioned in the introduction section Bulgarian policies in the field of transport are implemented through a set of strategic documents that differ in terms of their scale, subject and horizon. Some of them focus on a concrete mode of transportation, others have a broader scope and include the whole sector. Below a brief information is given regarding those strategies and programmes that according to their subject and goals have the potential to partially or significantly influence ports activities.

The main strategies in this regard are the **Integrated Transport Strategy for the period until 2030** and the **Transport Connectivity programme 2021 – 2027**. They give a comprehensive overlook of the whole transport sector and the state's vision for its development and therefore have direct impact on ports. These documents are analyzed in detail in the next chapters of the report.

The **Strategy for the Development of Road Infrastructure 2016 – 2022** presents the current state of road infrastructure in the country and provides the state's goals and vision for its further development. The SDRI is essentially a platform for coordination and concentration of resources to achieve maximum effect of the funds invested in maintenance, modernization and development of roads in Bulgaria. However, our analysis has shown that the document does not consider the importance of local and international road networks for the overall connectivity of ports. In fact, ports are only mentioned in the strategy very generally as a component of the whole transport sector. In addition the SDRI's horizon does not go beyond the year 2022 and in reality there are no practical options to address some of the existing gaps so that the document would be more beneficial to ports.

The **Programme for the Development and Exploitation of Railway Infrastructure 2019 – 2023** is developed by the National Railway Infrastructure Company and it examines the condition of the railroad network in Bulgaria and the main factors that influence its development. The document also provides a set of measures to improve railway transportation in the short to mid-term. As a whole the document does not take into account that both river and seaports require good connections with the national railroad infrastructure. The only actions in this direction that are discussed in the PDERI are some marketing measures to promote investments for the construction of fright terminals in the ports of Ruse, Varna and Burgas, and research for the completion of port infrastructure and rail connections in Burgas in accordance with efforts to improve access to The Orient/East-Med Corridor of the TEN-T. In addition, a great deal of the programme's content is identical to that of the same document from the previous programming period (the horizons of the two partially overlap with the first one being from 2017 to 2021, and the second – from 2019 to 2023). There are two possible explanations to that: either the latest PDERI has not been developed exactly in accordance with the most up-to-date requirements of the railroad sector, or the state's incentives in support of the railway infrastructure

throughout the last few years have been insufficient, and therefore the assessments and recommendations in the previous version of the document are still relevant.

The **Strategy for Maritime Safety and Protection of the Environment from Ship-source Pollution** aims to ensure the achievement and maintenance of a high level of safety and security of shipping, and to enhance protection of the marine environment from ship-source pollution. It is developed solely for the purpose of the preparations for the forthcoming mandatory audit of Bulgaria under the Member State Audit Scheme of the International Maritime Organization. The strategy provides the required policy framework which will be used to prove that the waterway transport activities are compliant to the standards and requirements of the IMO. The SMSPESP does not include any incentives regarding port infrastructure or activities whatsoever. Therefore we consider it to be irrelevant to this report.

The **Maritime Spatial Plan of the Republic of Bulgaria 2021 – 2035** provides information on factors that influence maritime transport and trade activities in Bulgaria. It has no relevance to river ports whatsoever.

Another document with potentially significant influence on port activities is the **National Plan for the Development of Combined Transport in the Republic of Bulgaria for the period until 2030.** However, currently the plan is in the phase of preparation and there are no draft versions available for analysis.

The brief overview of the existing strategic documents with potential influence on ports shows that in Bulgaria there definitely is a comprehensive policy framework for the overall development of the transport sector, but in most cases ports are neglected to some extent. Needs for investments in improvement of port activities and their importance for the overall connectivity on a regional and national levels are often underrepresented in transport strategies. This tendency is clearly supported by the fact that currently **there is no strategy solely for the development of the waterway transport** in Bulgaria, unlike other modes of transportation.

Transport development strategies, policies and programmes identified to have substantial or more than marginal influence on ports are listed in the following table.

Economic development strategies, policies and programmes	Mentioning ports	Not mentioning ports, but could or should affect ports	Low influence on ports	Medium influence on ports	Strong influence on ports
Integrated Transport Strategy for the period until 2030	X				X

Transport Connectivity programme 2021 – 2027	X				X

Table 1: Listing of transport development strategies and their influence on ports

4.1 Integrated Transport Strategy for the period until 2030

4.1.1 Current state

The Integrated Transport Strategy for the period until 2030 represents a comprehensive plan for sustainable development of Bulgaria's transport system and a framework for investments in the sector. The document defines the contribution of the country to the Single European Transport Area, including priorities for investments in primary and extended TEN-T network and in secondary connectivity. It is developed in compliance with the principles of consistency, continuity and synergy with national and European strategic documents and has a horizon of fourteen years (2017 – 2030).

The ITS first defines the main national strategic objectives for transport development, which include increasing the effectiveness and competitiveness of the sector, improvement of the transport connectivity and access (internal and external), and limiting the negative effects on the environment and people's health, caused by transport sector development activities. The document then suggests several priorities to achieve each of the strategic objectives, including modernization of transport infrastructure and improvement of its management, development of intermodal transport, increasing energy efficiency, improvement of the connectivity of Bulgarian transport systems with the Single European Transport Area, increasing security and safety of the transport system etc. The priorities in turn consist of particular objectives for the achievement of the strategic ones.

Further the strategy makes an in-depth analysis of the current situation of the transport sector in Bulgaria, which is based on a large-scale collection of existing and new data. It consists of several subchapters that separately examine: the macroeconomic, demographic and social conditions in the country; railway transport; road transport; maritime and inland waterway transport; air transport; intermodal transport; transport service quality; strengths, weaknesses, opportunities and risks in the sector. Next the ITS examines the current and future passenger and freight transport demands and assesses the administrative capacity for transport development in Bulgaria.

The strategy then determines the infrastructure, organizational and operational measures required to achieve its strategic objectives through projects for the improvement of the transport system, and provides three different scenarios (A, B and C) for the course of development of the sector. Scenario A is the most effective from a

financial point of view. Scenario B is the most effective from an economic and ecological point of view. Scenario C envisions maximum volume of investments. An annex to the document describes the methodology with which the three scenarios were developed, and scenario B was selected as the most appropriate.

Further the strategy suggests a list of concrete projects (according to the selected scenario B) for investments in railway, road, water, and intermodal transport. They are divided into three main groups: projects planned for implementation under Operational programme Transport and Transport Infrastructure 2014 – 2020 and Connecting Europe Facility; projects planned for implementation under national funding and government loans from international financial institutions by 2022; indicative projects for implementation in the period 2022 – 2030. For each project there is information provided regarding its period of implementation and current progress, its estimated value and sources of funding, and connection of the project with the TEN-T network. Some of the projects are: modernization, reconstruction and electrification of railway lines and stations in the regions of Plovdiv and Burgas; development of railway junctions in the cities of Plovdiv and Sofia; construction of the Struma Motorway (connecting Sofia with the Greek border in the region of Petrich); expansion of the subway system in Sofia; rehabilitation of some lower-class roads; construction of certain sections of the Hemus Motorway (Sofia – Varna); construction of a logistic complex and an intermodal terminal in Varna.

The projects that have direct relevance to river ports are: construction of an intermodal terminal in the city of Ruse; construction of bridges over the Danube river at Silistra, Ruse, Nikopol and Oryahovo; feasibility studies for the development of port community system; participation in FAIRway Danube (a project with the aim to increase safety and efficiency of inland navigation, co-financed by the Connecting Europe facility programme); rehabilitation and modernization of the railway lines Ruse – Varna and Ruse – Gorna Oryahovitsa. The strategy ends with an overall budget and financial plan for the projects.

The ITS most definitely **has influence on port development**, since water transport is an essential part of the whole sector. The chapters which have direct impact on port activities in the country are the analysis of the current situation regarding waterway transport, and the list of projects for investments in the development of maritime transport systems.

4.1.2 Desired state

The Integrated Transport Strategy for the period until 2030 should consider river ports as a significant part of the whole transport sector. Ports in the Bulgarian section of the Danube River are to certain extent insufficiently maintained and in deteriorated technical condition. The main problems for their development are related to the lack of sufficient investments for maintenance and construction of infrastructure, obsolete facilities and poor condition of the quays. Taking this into account it is important that

the ITS, having a significant strategic horizon, provides financial incentives in support of port development in several main directions: construction of new port infrastructure and modernization of the existing one; improvement of intermodality and connectivity with local and transnational road and railroad networks; enhancement of digitalization and sustainability of ports.

4.1.3 Gap identification

From the investment projects described in previous sections of the report it is visible that the Integrated Transport Strategy for the period until 2030 addresses the main needs of waterway transport successfully to a certain degree. A problem, however, is the lack of plans for investments in the construction of new port facilities and modernisation of existing ones. The only projects with impact in this area are those for the development of a logistic complex and an intermodal terminal in Varna, and there are no incentives in regard to river ports whatsoever (the construction of an intermodal terminal in Ruse being an exception). We consider this to be a severe gap, taking into account the importance of inland waterway transport both for trade and tourism within EU. The current condition of river port facilities in Bulgaria is in many cases unsatisfactory and missing the opportunity to plan investments for their development for the next ten years could lead to significant lagging behind European standards.

The ITS provides more concrete and efficient measures in regard to road connectivity within port areas. Good examples in this direction are: the completion of the Hemus motorway; the construction of bridges over the Danube river at Silistra, Ruse, Nikopol and Oryahovo; rehabilitation of road connections of the port town of Tutrakan with the provincial administrative center of Targovishte and the town of Kubrat. These incentives are adequate and necessary, but insufficient. We consider that rehabilitation of first, second, and third class roads is needed on a larger scale in the regions along the Danube. Further, construction of high-speed road infrastructure for traffic along the north-south axis is also required, including for the needs of international transport. This would benefit port activities and regional connectivity as a whole, considering that roads are the most common mode of transportation in the country. Therefore, we believe that the insufficient support for the improvement of the road network is a gap in the strategy.

The ITS envisions the implementation of several beneficial measures in the area of intermodality and railroad connectivity of ports. These include the construction of an intermodal terminal in Ruse and the rehabilitation and modernization of the railroad lines Vidin – Sofia and Ruse – Gorna Oryahovitsa. We consider that these projects could have moderate positive impact on the quality of rail transport services, but further investments are required not only to improve the existing infrastructure, but also to expand it by building new lines. Construction of more intermodal terminals could also be an option in this regard. As a whole, enhancement of the railroad network could help reduce road traffic which would limit amortization of roads and the negative effect on the environment from carbon dioxide emissions.

- Gap 1: Lack of investments in construction and development of river port facilities Level: 1
- Gap 2: Insufficient measures in support of road infrastructure in port areas Level: 1
- Gap 3: Insufficient measures in support of railroad infrastructure and intermodality in port areas Level: 2

....

4.1.4 Recommendations to close the gaps

Considering that the Integrated Transport Strategy for the period until 2030 was developed and approved in 2017, in reality there are no options to implement any amendments for the sake of closing the existing gaps. Therefore, solutions should be sought through modifications of other documents that are in the phase of preparation, such as the Transport Connectivity programme 2021 – 2027, the Interreg VI-A Romania-Bulgaria Programme, and the National Recovery and Resilience Plan of the Republic of Bulgaria. Another option is to introduce small-scale case by case targeted incentives on a national level. This would require coordination between the Ministry of Transport, Information Technology and Communications, and the Ministry of Finance. Concrete measures to bridge each of the existing gaps are provided below.

Gap 1: Lack of investments in construction and development of river port facilities.

As it was already mentioned, river ports in Bulgaria are insufficiently maintained and in deteriorated technical condition. The port of Ruse is in a relatively good state, if compared to other facilities in the region, but investments are greatly needed for the development of the ports of Vidin and Silistra, which are the other two big ports on the Danube. Measures could include: rehabilitation and modernization of the existing terminals and construction of new ones; development of charging stations for alternative fuels; construction of facilities for treatment and disposal of waste and for landslide and flood prevention; actions for deepening of the areas in front of the quays; improvement of safety in ports etc. In addition, investments in the ports of Lom, Oryahovo, Nikopol and Tutrakan could also be considered with the objective to improve river cruise services.

Gap 2: Insufficient measures in support of road infrastructure in port areas.

This gap could be closed through measures in support of the modernization and development of the network of lower class roads in all regions along the Danube river, which includes the regions of Vidin, Monatana, Vratsa, Pleven, Veliko Tarnovo, Ruse and Silistra. Further, the implementation of the existing national project for the construction of a motorway that would connect the cities of Ruse and Veliko Tarnovo

would greatly benefit the connectivity along the north-south axis which would certainly enhance international trade.

Gap 3: Insufficient measures in support of railroad infrastructure and intermodality in port areas.

The Integrated Transport Strategy for the period until 2030 provides projects for the rehabilitation of the railroad infrastructure, but we consider that certain areas along the Danube River could benefit from the construction of new lines. Such is the case with the town of Tutrakan, which is between 60 and 80 km. away from the nearest train stations in Silistra, Razgrad and Ruse. The region of Tutrakan is actually one of the largest zones of the country without any railway lines. In addition, the development of an intermodal terminal in the city of Vidin could also be of great value for local and national connectivity. We believe that such project would harmonize with some of the objectives of the ITS, considering that the strategy envisions rehabilitation of the Vidin – Sofia line.

The following table summarizes the gaps identified in the Integrated Transport Strategy for the period until 2030, as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
1	Lack of investments in construction and development of river port facilities	Concrete measures for the development of facilities in the ports of Vidin and Silistra
1	Insufficient measures in support of road infrastructure in port areas	Modernization and development of the network of lower class roads in all regions along the Danube river and construction of the Ruse – Veliko Tarnovo motorway.
2	Insufficient measures in support of railroad infrastructure and intermodality in port areas	Construction of a railway connection with the town of Tutrakan.

Table 2: Gaps in the Integrated Transport Strategy for the period until 2030 and recommended actions to close them

4.2 Transport Connectivity Programme 2021 - 2027

4.2.1 Current state

The Transport Connectivity programme 2021 - 2027 is one of Bulgaria's operational programmes, funded by the European regional development fund, the European social fund, the Cohesion fund, the European maritime and fisheries fund, and some national funds. It determines the country's policies regarding the usage of EU budget for investments in improvement of the transport sector. The document is developed in accordance with the Operational Programme on Transport 2007 - 2013 and the Operational Programme Transport and Transport Infrastructure 2014 – 2020, and is essentially their continuation for the next programming period. Currently the TCP is in the phase of preparation and for the purpose of this report we have analyzed its most current draft version.

The programme starts with an analysis of the existing challenges for the development of the transport system in Bulgaria. First it describes the economic, social and territorial disparities and inequalities in the country. Then, the main problems regarding all means of transportation are identified, including rail and road infrastructure, ports and air transportation. Some of these include: the unsatisfactory condition of the railroad networks and their insufficient integration into the European system; underdeveloped highway network which does not provide the required quality of connections between Bulgaria and neighboring countries; unsatisfactory condition of parts of the road infrastructure; lack of bypass roads in settlements in the areas with high traffic intensity; poor connectivity of airports with other types of infrastructure; insufficiently developed connections of sea and inland ports and airports with the national railway network; lack of charging facilities for alternative fuels in ports; poor conditions of the navigable part of the Danube river etc.

Further the TCP gives general recommendations for investments, corresponding to the main problems that were identified prior to that, and gives guidelines for achieving complementarity of the efforts applied.

Based on the recommendations the programme determines five strategic priorities for the development of the transport system. These are: *Development of the railway infrastructure along the core and comprehensive Trans-European Transport Network*; *Development of road infrastructure and connections along the core Trans-European Transport Network*; *Improving intermodality*; *Implementation of transport innovations, traffic managing systems and improvements in traffic safety and security*; *Technical assistance*. Each of the priorities suggests concrete projects for investments. For the first priority some of these are completion of the modernization of the railway sections Elin Pelin – Kostenets, Sofia – Pernik, Pernik – Radomir and Karnobat – Sindel; building a railway connection between Bulgaria and Northern Macedonia; implementation of the European Railway Traffic Management System. The priority regarding road infrastructure considers projects such as construction of

sections of the Struma Motorway; building a detour at the city of Gabrovo; construction of a motorway that would connect the cities of Ruse and Veliko Tarnovo; building a tunnel under the Shipka Pass (through the Stara planina mountain). The third priority includes projects for investments in the development and expansion of the ports of Lom and Varna; construction of facilities against flooding in Ruse-West port terminal; building railway connections to the airports of Burgas and Plovdiv. The fourth priority suggests projects for development of transport information systems, usage of multifunctional vessels, modernization and construction of facilities to improve transport safety and environmental protection etc. The technical assistance priority includes activities aimed at: the successful completion of the OPTTI and preparations for the next programming period; increasing the administrative capacity of the programme's managing authority and its beneficiaries; preparation, implementation, monitoring, control, evaluation and promotion of investments in the transport sector. Each priority has a description of the sources of funding, as well as end product indicators and results.

The programme also includes chapters regarding its finance plan, the governmental bodies involved in its implementation, opportunities for partnership and requirements for communication and transparency.

We consider that the Transport Connectivity programme 2021 – 2027 has significant **influence on port activities**. The document through its priorities provides two main perspectives that directly address ports – investments in development of port facilities and projects for improvement of intermodal connectivity of ports with road and railroad networks.

4.2.2 Desired state

The Transport Connectivity programme 2021 – 2027 has a central role in the government's vision for the development of the whole sector. It puts a special focus not only on the improvement of the different modes of transportation, but also on enhancement of intermodality, and connectivity and integration of the country's infrastructure networks within the TEN-T. River ports could be an important element in the process of achieving these goals. Therefore, we consider that the TCP should envision projects for investments in port infrastructure rehabilitation and development, and for facilitation of ports' regional connectivity through improvements of road and railway connections and lines. Incentives in support of construction and modernization of intermodal terminals and digitalization could also be very beneficial. As a whole, the programme should provide tangible and concrete contribution for the enhancement of inland waterway transport, taking into account that it is currently in an unsatisfactory condition and a great deal of its potential remains unharvested.

4.2.3 Gap identification

In general the Transport Connectivity programme 2021 – 2027 addresses river port investment needs relatively well. Good examples for this are the projects for: development and enlargement of the port of Lom for the purpose of the construction of a multimodal terminal; reconstruction of ports of national importance, including the construction of flood protection facilities in the port of Ruse and the rehabilitation of the existing terminal in Lom; provision of additional multi-purpose rescue and patrol ships and multifunctional vessels; construction of charging infrastructure in ports. Nevertheless, we consider that there is still room for improvement, so that the programme could contribute more significantly for the development of inland waterway transport.

In terms of railroad connectivity one of the issues is that most of the measures are focused on improvement of the network in Southern and Southwestern Bulgaria, including modernization of the lines Sofia – Plovdiv, Sofia – Radomir and Karnobat – Sindel, and construction of a railroad connecting Bulgaria and North Macedonia. There are almost no incentives regarding North Bulgaria, with a few exceptions from this being the plans for the modernization of the railway stations in Ruse and Gorna Oryahovitsa. The development of the railroad network in the country's North is of great importance for transport and trade activities and therefore could stimulate prosperity of the Danube Region. Rail lines also have a central role in the context of improvement of intermodality and reduction of air pollution through mitigation of road traffic in favor of railways. This taken into account, we consider that the TCP does not provide sufficient support for the development of railway infrastructure in the areas along the Danube river, which is a gap in the programme.

In regard to road infrastructure the TCP provides several large-scale projects that are truly of benefit to river ports. They include construction of a motorway that would connect the cities of Ruse and Veliko Tarnovo, and building a tunnel for the needs of road traffic under the Stara planina mountain to connect Northern and Southern Bulgaria. These, along with the completion of the Hemus motorway will undoubtedly give a significant boost to connectivity in the Danube region, which will in turn enhance mobility and international commerce. A certain aspect of road transport which has influence on port activities, however, remains relatively unaddressed in the programme – maintenance and modernization of first, second, and third class roads. Despite that these are not of relevance to the TEN-T, we consider that higher quality of lower class routes in the area of river ports would support trade, tourism, and local connectivity and prosperity as a whole. The TCP does indeed envision a project named *Construction, reconstruction and rehabilitation of road connections to the TEN-T network*, which could possibly attend to some of the needs of first, second and third class infrastructure, but it is very generally planned and does not include measures for the development of any particular road connection. We believe that more efforts are required in this direction and consider the lack of such to be a gap.

- Gap 1: Insufficient investments for the development of railroad infrastructure in river port areas Level: 3
- Gap 2: Insufficient investments for the development of road infrastructure in river port areas Level: 4

....

4.2.4 Recommendations to close the gaps

From a technical perspective, the gaps in the Transport Connectivity programme 2021 – 2027 could be closed through amendments in the document, considering that it is still in the preparation phase. This would require the engagement of national authorities (mostly that of the Ministry of Transport, Information Technology and Communication) and coordination with the European Commission.

Gap 1: Insufficient investments for the development of railroad infrastructure in river port areas.

Investments in railroad infrastructure development alongside with the construction of intermodal facilities would be very beneficial for port activities. This could be achieved through modernization and rehabilitation of lines and stations. Especially suitable for incentives of such type are the railway routes Vidin – Sofia and Ruse – Gorna Oryahovitsa, which are the two lines in North Bulgaria with potentially significant importance for international commerce, and at the same time are in need of rehabilitation. In addition they go along European routes E79 and E85 and can have supplementary functions regarding them. Another potential project for investment is the railroad Ruse – Varna, which offers opportunities to connect inland and sea waterway transport. In terms of modernization of train stations, most facilities in cities along the Danube River are in a state that requires improvement, including stations in Vidin, Lom, Svishtov, Ruse and Silistra. Projects aimed at closing this gap should be implemented in the *Development of the railway infrastructure along the core and comprehensive Trans-European Transport Network* and in the *Improving intermodality* priorities of the programme.

Gap 2: Insufficient investments for the development of road infrastructure in river port areas.

In general, the network of roads in Bulgaria has a satisfactory level of density but is poorly maintained and depreciated. Projects for the construction of motorways are of strategic significance for international traffic but lower class roads remain an important part of local connectivity. First, second, and third class national roads in Bulgaria are the main means for transportation between nearby towns and villages. Incentives in support of local infrastructure development could enhance mobility and prosperity of the population. Modernization of this type of routes in port areas would especially stimulate business and trade activities of small and medium-sized enterprises. Investments for infrastructure optimization are required in every Bulgarian province along the Danube River, but we consider that the need for

support is most acute in the Northwestern areas, namely the Vidin, Montana and Vratsa provinces. The most appropriate approach to implement such incentives in the TCP would be through the already existing project *Construction, reconstruction and rehabilitation of road connections to the TEN-T network*, which generally has the required focus but lacks any concrete measures. It could be modified to include actions for the rehabilitation and modernization of particular routes.

The following table summarizes the gaps identified in the Transport Connectivity programme 2021 – 2027, as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
3	Insufficient investments for the development of railroad infrastructure in river port areas.	Modernization and rehabilitation of railway stations in port cities and of the rail lines Vidin – Sofia, Ruse – Gorna Oryahovitsa and Ruse – Varna.
4	Insufficient investments for the development of road infrastructure in river port areas	Rehabilitation of first, second and third class roads in the provinces of Vidin, Montana and Vratsa.

Table 3: Gaps in the Transport Connectivity programme 2021 – 2027 and recommended actions to close them

5 Gap analysis summary

5.1 Gaps, actions to close the gaps and strategy inputs

Below table summarizes the gaps and actions to close the identified gaps.

Strategy	Objectives	Current state	Desired state	Gaps	Actions to close the gap	Timeline for actions
Integrated Transport Strategy for the period until 2030	To provide a plan for sustainable development of Bulgaria's transport system and a framework for investments in the sector; to define the country's contribution to the Single European Transport Area, including priorities for investments in primary and extended TEN-T network and in secondary connectivity.	The ITS determines the infrastructure, organizational and operational measures required to achieve its strategic objectives through a list of concrete projects for investments in railway, road, water, and intermodal transport.	The ITS should provide financial incentives in support of port development in several main directions: construction of new port infrastructure and modernization of the existing one; improvement of intermodality and connectivity with local and transnational road and railroad networks; enhancement of digitalization and sustainability of ports.	Gap 1 (Level 1): Lack of investments in construction and development of river port facilities. Gap 2 (Level 1): Insufficient measures in support of road infrastructure in port areas Gap 3 (Level 2): Insufficient measures in support of railroad infrastructure and intermodality in port areas.	Actions to close gap 1: concrete measures for the development of facilities in the ports of Vidin and Silistra. Actions to close gap 2: modernization and development of the network of lower class roads in all regions along the Danube river and construction of the Ruse – Veliko Tarnovo motorway. Action to close gap 3: Construction of a railway connection with the town of Tutrakan.	Modernization and development of the network of lower class roads could be achieved in the short term (by the end of 2023). All other actions are to be implemented throughout the horizon of the strategy (until 2030).

Strategy	Objectives	Current state	Desired state	Gaps	Actions to close the gap	Timeline for actions
Transport Connectivity programme 2021 - 2027	To determine Bulgaria's policies regarding the usage of EU budget for investments in improvement of the transport sector; to increase the effectiveness and competitiveness of the sector; to improve transport connectivity and access; to limit the negative effects on the environment and people's health, caused by transport sector development activities.	The programme determines five strategic priorities for the development of the transport system, including improvements in road and railroad infrastructure, intermodality, innovations and technical assistance. Each of them suggests concrete projects for investments.	The TCP should include projects for investments in port infrastructure rehabilitation and development; facilitation of ports' regional connectivity through improvements of road and railway connections; construction and modernization of intermodal terminals and digitalization.	Gap 1 (Level 3): Insufficient investments for the development of railroad infrastructure in river port areas. Gap 2 (Level 4): Insufficient investments for the development of road infrastructure in river port areas.	Actions to close gap 1: Modernization and rehabilitation of railway stations in port cities and of the rail lines Vidin – Sofia, Ruse – Gorna Oryahovitsa and Ruse – Varna. Actions to close gap 2: Rehabilitation of first, second and third class roads in the regions of Vidin, Montana and Vratsa.	Rehabilitation of first, second and third class roads in the regions of Vidin, Montana and Vratsa could be achieved in the short term (by the end of 2023). Modernization and rehabilitation of railway lines and stations should be considered for completion throughout the programming period (2021 – 2027).

Table 4: Gap analysis summary for Bulgaria

6 Conclusions

The transport sector in Bulgaria is a subject of a diverse set of strategic documents. A great share of them recognises the significant needs for infrastructure modernization and development in the country. All of the main plans, programmes and strategies suggest measures for investments in rehabilitation of existing roads, railways, ports and other facilities, and at the same time include projects for the construction of new ones.

Bulgaria's transport policies are in general planned and implemented in accordance with the growing demands for joint development of all modes of transportation. The need for integration of different networks and for expanding the set of intermodal connections is well taken into account. All strategies envision efforts for improvement of connectivity of national transport lines within the European system.

Waterway transport in particular is mostly well addressed in the large-scale strategic documents, including the Integrated Transport Strategy for the period until 2030, the Transport Connectivity programme 2021 – 2027, the National Recovery and Resilience Plan of the Republic of Bulgaria, The National Development Programme Bulgaria 2030, and the Interreg VI-A Romania – Bulgaria Programme. They provide incentives in support of port infrastructure development and modernization, improvement of port connectivity with road and railroad networks, enhancement of digitalization and transition to sustainable transportation.

A significant shortcoming, however, is the lack of a specialized strategy developed solely for the needs of waterway transport. We consider this to be major deficiency which should be regarded as a general gap in the country's policymaking in the area of transport. Closing it through the creation of such a programme would greatly benefit the cause of making waterway transport a modernized and integrated component of the whole transport system.

7 References

1. **Integrated Transport Strategy for the period until 2030**
2. **Transport Connectivity programme 2021 – 2027 – draft version (01.02.2021)**
3. **Strategy for the Development of Road Infrastructure 2016 – 2022**
4. **Programme for the Development and Exploitation of Railway Infrastructure 2019 – 2023**
5. **National Development Programme BULGARIA 2030**
6. **Interreg VI-A Romania-Bulgaria Programme – extract of the draft version (August 2021)**
7. **National Recovery and Resilience Plan of the Republic of Bulgaria – version 1.4 (15.10.2021)**
8. **Strategy for Maritime Safety and Protection of the Environment from Ship-source Pollution**
9. **Maritime Spatial Plan of the Republic of Bulgaria 2021 – 2035**

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EUROPEAN UNION

Danube Transnational Programme

DIONYSUS

Integrating Danube Region into Smart & Sustainable Multi-modal & Intermodal Transport Chains

Analysis of European & National Transport Policies, Strategies & Programs with regard to the Danube Ports

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Executive summary

In Romania the national transport policies, strategies & programs with regard to the Danube ports are established by the central authority – the Ministry of Transport and Infrastructure. The main strategic document for transport infrastructure is the General Transport Master Plan (modified at the end of 2021) and will be the basis for 2021 – 2027 EU financing period. For ports, the document will be supplemented with a naval transport strategy. The naval transport strategy will be prepared within a project financed from the Large Infrastructure Sectorial Program 2014 – 2020 and will provide a deep analysis on the current situation of infrastructure and cargo flows, on the institutional system and tariffs. The Strategy for Development of the Naval Transport in Romania aims to achieve a correct and concrete planning of investments necessary to be supported in Romanian ports, a resizing of tariff and customs policies, the creation of strategic alliances with the states on the Caspian and Black Sea corridor. The possibility of local authorities along the Danube to become eligible for funding for new commercial and tourist port infrastructure will also be considered.

The naval transport strategy is mentioned in the Recovery and Resilience national plan as basis for future reforms in the field.

The Government Program 2021 – 2024 is a short term strategy of national significance. It defines the priorities of the Government during its mandate. The actual Government Program contains general directions, but also mention concrete projects to be implemented and stress the importance of the development of the Port of Constanta.

All the national strategies take into consideration the European priorities established under TEN-T Regulation 1315/2013 defining the core and comprehensive networks of ports and inland waterways and their components and CEF Regulation 1316/2013 defining the multimodal core corridors with focus on inland waterways and rail, as environmentally friendly modes of transport.

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3 Abbreviations

Abbreviation	Explanation
MTI	Ministry of Transport and Infrastructure
POIM 2014 - 2020	Large Infrastructure Sectorial Program 2014 - 2020
POT	Operational Program for Transport 2021 - 2027
PNRR	Recovery and Resilience National Plan

4 Introduction

The national transport strategies are:

- The Government Program – approved by Decision 42/2021 of The Romanian Parliament
- General Transport Master Plan – approved by the Government Decision no. 666/2016 (updated at the end of 2021 – Investment Program

Currently there are ongoing the elaboration of the:

- Naval Transport Strategy
- Institutional Strategic Plan

The Government Program and General Transport Master Plan are addressing all modes of transport.

The Government is organized and functions in accordance with the Constitution, based on Government Program approved by Parliament. The Government Program is a political-administrative document that sets out the principles, guidelines and steps needed to be taken that the Government intends to implement during its term in office in all the fields of activity. To achieve the goals stipulated in the Government Program, the Romanian Government performs the functions of strategizing, regulating, administering, representing and exercising the state authority.

Romania elaborated the Recovery and Resilience National Plan which was approved on 28.10.2021 by the European Council. The total financial allocation is 29.2 billion of Euro. In the field of transportation PNRR will provide financing for road and rail infrastructure on the main corridors, on sectors which are not completed (like Pitesti – Sibiu sector on roads). PNRR was not included with a detailed presentation in this report, because it will not apply for ports. PNRR specify that a Naval Transport Strategy is necessary, provision that is included in the other two strategies presented here.

All the national strategies take into account the European strategies in the field of transportation and for the scope of the document we are referring here at those ones related to the inland waterways. These strategies are:

- NAIADES III
- Sustainable and Smart Mobility Strategy
- EU Strategy for the Danube Region
- EU TEN-T Regulation 1315/2013, currently subject for modification at EU level
- EU CEF Regulation 1316/2013.

In terms of infrastructure a high priority is given to the TEN-T infrastructure.

5 Strategies with existing or potential influence on ports

Transport development strategies, policies and programmes identified to have substantial or more than marginal influence on ports are listed in the following table.

Economic development strategies, policies and programmes	Mentioning ports	Not mentioning ports, but could or should affect ports	Low influence on ports	Medium influence on ports	Strong influence on ports
The Government Program 2021 - 2024	X			X	
General Transport Master Plan 2020 - 2030	X			X	
Institutional Strategic Plan	X			X	
Naval Transport Strategy	X				X

Table 1: Listing of transport development strategies and their influence on ports

5.1 The Government Program 2021 - 2024

The Government Program was approved by the Decision of Parliament no. 42/25.11.2021 and will apply for the period 2021 – 2024. It contains the priorities of the Government for all the aspects of the country.

Connecting the historical regions through infrastructure by continuing investments in the construction of highways, railways and intermodal means of transport by 2024, geographical balancing of infrastructure, restoration of railways, strengthening the economic and strategic position of the port of Constanta are just the main goals. Ensuring connectivity and accessibility to the main transport corridors leading to improved connections between the main economic growth poles will be the main objective of transport policies.

The balanced and cohesive development of Romania, so that no region lags behind in terms of transport infrastructure development, is the priority of the Government Program 2021-2024, being considered a vector in terms of increasing living standards, people income and to stimulate investment.

The coalition of the new government was structured based on the following principles that are particularly necessary in combating and mitigating the effects of the current crisis, but especially in supporting the development and evolution of Romania: resilience, sustainability, transparency, equity and efficiency.

5.1.1 Current state

Related to transportation the program states:

The development of transport infrastructure is an essential condition for increasing the standard of living, income of people, for stimulating investment, for creating new jobs, for increasing the mobility of citizens and goods, for removing socio-economic isolation of underdeveloped areas through balanced development of transport networks between all regions of the country. Ensuring connectivity and accessibility to the main transport corridors leading to improved connections between the main economic growth poles will be the main objective of transport policies. No region will be left behind in terms of the development of transport infrastructure, thus stimulating the balanced and cohesive development of Romania.

For the next 3 years (2022 – 2024), the priorities regarding the naval sector will aim at capitalizing on the huge potential offered by the Danube River, development of commercial ports on the Danube, transformation of the port of Constanta into regional leader, intensification of the project completion process and preparation of projects to be funded from European Union funding programs for the period 2021-2027.

Priorities in the field of naval transport concern:

- elaboration of the naval strategy;
- ensuring the navigation conditions on the Danube all over the year;
- development of river ports by creating facilities for storage and operation of containers;
- increasing the competitiveness of Romanian water transport companies, through financial policies and facilities for the renewal of fleets and port operating equipment, so as to increase the competitivity of water transport, faster handling of goods in ports, decrease in fuel and electricity consumption and reduction of emissions and residues;
- modernization of the infrastructure of sea and river ports (Constanţa, Galaţi, Giurgiu, Corabia, Calafat, Drobeta, Oltenița, etc.) and connection of ports, especially river ports, to road and rail transport systems;
- development of the Port of Constanta by promoting a major investment plan, so that it reaches its maximum potential and expands its hinterland with prospects to become the most important port in the region;
- analysis of the opportunity to set up ferry lines between Constanta Port and other ports in the Black Sea basin;
- increasing traffic safety by developing infrastructure for coastal maritime traffic information and management services and the acquisition of technical vessels;
- digitization: development of the Port Community System IT platform; permanent updating of electronic navigation charts; exchange of RIS (River Information Services) information at regional level; tools for

waterway management; improving the IT infrastructure for storing and processing geospatial data; creation and operation of databases for qualification certificates, service logs and logbooks according to EU Directive 2017 / 2397; implementation of the Single European Maritime Window (EMSWe) in accordance with Regulation (EU) 2019 / 1239;

- integration of river ports into the European tourist circuit in order to develop tourist circuits specific to river tourism, including multimodal terminals and transport infrastructure connections to river ports;
- reducing the bureaucracy, the multiple tariffs applied to the goods, as well as the application of a common policy regarding the way of attracting the goods on the inland waterways and of the Romanian ports.

Major investments in infrastructure will be supported, the main source of financing being European non-reimbursable funds, a key factor in Romania's modernization. The European Union encourages states to access, in addition to European funds, other funding instruments to maximize their impact and to enable the development of more projects. Thus, action will be taken in 3 directions to obtain a mix that will ensure the necessary financing:

- allocating, on average, 2% of GDP for transport infrastructure by 2030;
- use of non-reimbursable external funds (Operational Program for Large Infrastructure 2014 – 2020, Operational Program for Transport 2021 – 2027, Connecting Europe Facility, National Plan for Recovery and Resilience);
- reimbursable funds, PPP or IFI.

5.1.2 Desired state

The Government Programme mention as well specific projects. For naval transport the specific projects included are:

- Improving the navigation conditions on the common Romanian-Bulgarian Danube sector within the Fast Danube project. Approval of a Memorandum in for the establishment of a joint team with experts from transport, environment and European affairs to unblock the Fast Danube project by requesting the intervention of the European Commission;
- Ensuring the financing for the continuation of the protection and consolidation works of the high banks along the Danube - Black Sea Canal;
- Improving the navigability conditions on the Danube sector between Călăraşi and Brăila - elimination of the critical point Bala;
- Continuation of the existing portfolio of projects financed by European funds through strict monitoring of the Ministry of Transport and Infrastructure to ensure increased accessibility, maritime freight capacity and, implicitly, increased trade volumes;

- Development of specialized terminals in the port of Constanţa – Piers III and IV South;
- Extension to 4 lanes of the road between Gate 10 bis- Gate 10 within the Port of Constanta
- Modernization of the infrastructure for the electricity distribution in the port of Constanţa;
- Modernization of the port infrastructure by ensuring the increase of the depths of the channels and basins and of the safety of navigation in the port of Constanţa;
- Improving the safety of naval traffic by completing the process of purchasing multifunctional technical vessels and specific equipment;
- Modernization and expansion of the operating capacity in the ports of Medgidia and Luminita. Promotion of projects for the development and modernization of ports, in order to attract freight flows: Extension of port infrastructure and the railways system in the Port of Calafat; Modenization of the infrastructure of the port of Brăila within Docuri Basin;
- Analyzing the opportunity to update the feasibility study for the investment objective" Arrangement of the Argeş and Dâmboviţa rivers for navigation and other uses ".
- Elaboration of the Naval Transport Development Strategy which aims to achieve a correct and concrete planning of investments necessary to be supported in Romanian ports, a resizing of tariff and customs policies, the creation of strategic alliances with the states on the Caspian and Black Sea. The possibility of local authorities along the Danube River becoming eligible for funding for new commercial and tourist port infrastructure will also be considered.

5.1.3 Gap identification

The document represents the main priorities of the ruling Government. It does not mean that if an investment or measure is necessary this will not be promoted and usually the investments ongoing were not blocked if they were not included in the Government Program.

The Government Program has not enough focus on the maintenance of inland waterway infrastructure. In this respect for the road sector, an important objective for the period 2021-2024 focus on. increasing the quality of the road transport infrastructure, of national interest, through an ample program of current and periodic maintenance. For rail sector in order to increase the competitiveness of rail transport in the internal market it is envisaged ensuring adequate financial resources for maintenance work, along with specific safety and security solutions, including through work trains. For naval transport there is foreseen ensuring the navigation conditions on the Danube, all over the year.

So the gap identified in the scope of the present research report is:

- Gap 1: More focus on the maintenance of the IWT infrastructure

Level: 3

5.1.4 Recommendations to close the gaps

Gap 1: More focus on the maintenance of the IWT infrastructure

Action: Assurance of plans and financing for the maintenance of infrastructure

Implementation strategy: Maintenance plans approved at the level at the companies responsible for the administration of transport infrastructure and the Strategic institutional plan at the level of MTI

Timeline: continuously

Maintenance plans should be developed and it is done like this at the level of the companies that administrates transport infrastructure. In the case of ports financing is assured from their incomes. For the inland waterway, based on the Belgrade Convention (1948) subsidies are granted from the state budget.

The Government of Romania is implementing a project with the World Bank, addressing several ministries, including the MTI, for developing Strategic Institutional Plans. The scope of such plans, in the case of the MTI, is to assure and improve the institutional capacity of the ministry and to identify and to ensure a kind of continuity of financing for projects, but especially for maintenance works, having in view that the state budget is approved annually and the projects and maintenance works needs long term provisions.

It is worth to mention here that the new proposal for the TEN-T Regulation introduce article 48 - Maintenance and project life cycle. So, Member States shall ensure that:

(a) the infrastructure of the trans-European transport network is maintained in a way that it provides the same level of service and safety during its lifetime;

(b) long term maintenance plans including information on financing resources required to cover long-term maintenance costs of the existing and planned infrastructure are set up;

(c) maintenance needs and costs over the life-time of the infrastructure are taken into account in the planning phase of construction or upgrading;

Also, for the 2021 – 2027 financing period infrastructure projects can register delays in preparing and demonstrating the resilience to the climate change and if possible that they bring benefits to the environment.

The following table summarizes the gaps identified in (*title of strategy*), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
	More focus on the maintenance of the IWT infrastructure	Maintenance plans approved at the level at the companies responsible for the administration of transport infrastructure and the Strategic institutional plan at the level of MTI

Table 2: Government Programe 2021 – 2024 gaps and actions to close them

5.2 General Transport Master Plan 2020 - 2030

The General Transport Master Plan is approved by Government Decision no. 666/2016. In fact, an updated investment plan was developed and approved at the end of 2021, becoming the actual General Transport Master Plan, which will be the base for 2021 – 2027 EU financing programmes.

5.2.1 Current state

In the context of the European transport policy, which provides for the creation of a network integrated European networks, oriented towards the development of a central network, with a deadline 2030 (TEN-T Core) and a global network that will support the core network, with a deadline 2050 (TEN-T Comprehensive), Romania needs to increase the efficiency of infrastructure investments development-oriented transport of both European and national interest national and international connectivity, as well as increasing the accessibility of all regions Romania to the opportunities of the Single Market.

Figure 1: Front cover of the updated General Transport Master Plan for 2021 - 2030

Given the transition period between the two financial periods 2014-2020 respectively 2021-2027, given that the General Transport Master Plan and Strategy related to Implementation were adopted in 2016, as well as analyzing the need for correlation relevant public police in order to achieve the necessary infrastructure objectives at the level nationally, this document has a triple role of:

- prioritization of investments being a favorable condition for the new financial multiannual framework,
- updating the implementation strategy of the General Transport Master Plan of Romania,
- reference framework document for the relevant public policies and for all institutions involved in achieving the objectives of national transport infrastructure.

From the point of view of the approach of the European and national policies, this Investment Plan represents the correlation of three major areas of interest for the period 2020 - 2030, related to recovery of the basic infrastructure deficit at national level in all areas of transport, but especially in the road transport sector, applying EU policies and standards on trans-European transport networks, in particular in the rail sector, with compliance with the greening targets of the transport sector set out in the Green Deal and the Fit for 55 package, especially with regard to the road sector.

The general objective for the development of naval transport in Romania, is a high capitalization of the port of Constanta, being the port with the bigger depths in the Black Sea Basin and its links, using the advantages given by its geographical position on trade routes between Asia and Europe and its connection with Europe by the TEN-T multimodal Corridor Rhin – Danube (consisting of waterways, railways and highway network).

The most important strategic objectives are:

- Ensuring the minimum navigation depths on the Danube River;
- Developing and modernization of navigable canals;
- Developing and modernization of the Port of Constanța to attract new cargo flows and increasing its competitiveness
- Creation of a primary network of Romanian river ports and focusing the investments for its development;
- Promoting inland waterway transport

5.2.2 Desired state

Romania has two maritime ports: Constanta (having 3 areas: South, North and Midia) and Mangalia. In the next 10 years, the Port of Constanța will remain the main port and will have to increase 4 times the porth throughput (including RO-RO and containerized transport) reaching 200 million tons of cargo operated in 2030. For this, with compliance with state aid rules, the investments necessary for the development of

operating capacity will be developed, as well as administrative capacity measures to attract new freight flows. The port of Mangalia will remain secondary and will develop in correlation with the Port of Constanța (will not compete, will be as a whole). The port of Mangalia remain a port of national interest.

The port of Constanța together with its the connections by the Danube River, by railways and roads networks must become the central point of Romania 's transport strategy in order to position Romania as a transport hub between Europe and Asia:

Figure 2 : Romania geographical position as transport hub between Europe and Asia

River ports will be organized in such a way as to create a primary network of ports whose hinterland corresponds to an economic potential, as well as a secondary network of ports that ensure the accessibility of specialized goods. The ports of on the primary and secondary network retains their national importance. The ports in the primary and secondary network will be supported, according to state aid rules for the development of infrastructure and capacity to provide port services.

The ports on the primary network are: Constanța, Sulina, Tulcea, Galați, Brăila, Cernavodă, Călărași, Oltenița, Giurgiu, Corabia, Calafat, Dr. Tr. Severin, Orșova, Moldova Nouă (Figure 2).

Based on traffic volumes recorded in 2019, the more used (cargo volumes of approximately 500 thousand tons or more) river ports are Galați, Tulcea, Brăila, Cernavoda, Drobeta Tr. Severin, Călărași, Măcin-Turcoaia, Giurgiu, Basarabi (Murfatlar), Ovidiu and Oltenița. Given that this Plan provides for the updating of the MPGT, it is proposed the primary network of river ports according to MPGT and presented in figure 2, with the mention that the Port of Constanța is a seaport.

With regard to the secondary network, it is proposed to build on the volumes of traffic recorded, as well as the analysis of the cargo operated and the economic potential of the area.

The ports in the secondary network are: Bechet, Turnu Măgurele, Zimnicea, Feteș, Medgidia, Basarabi, Ovidiu, Luminița, Măcin, Hârșova, Isaccea, Mahmudia, Chilia Veche (Figure 2).

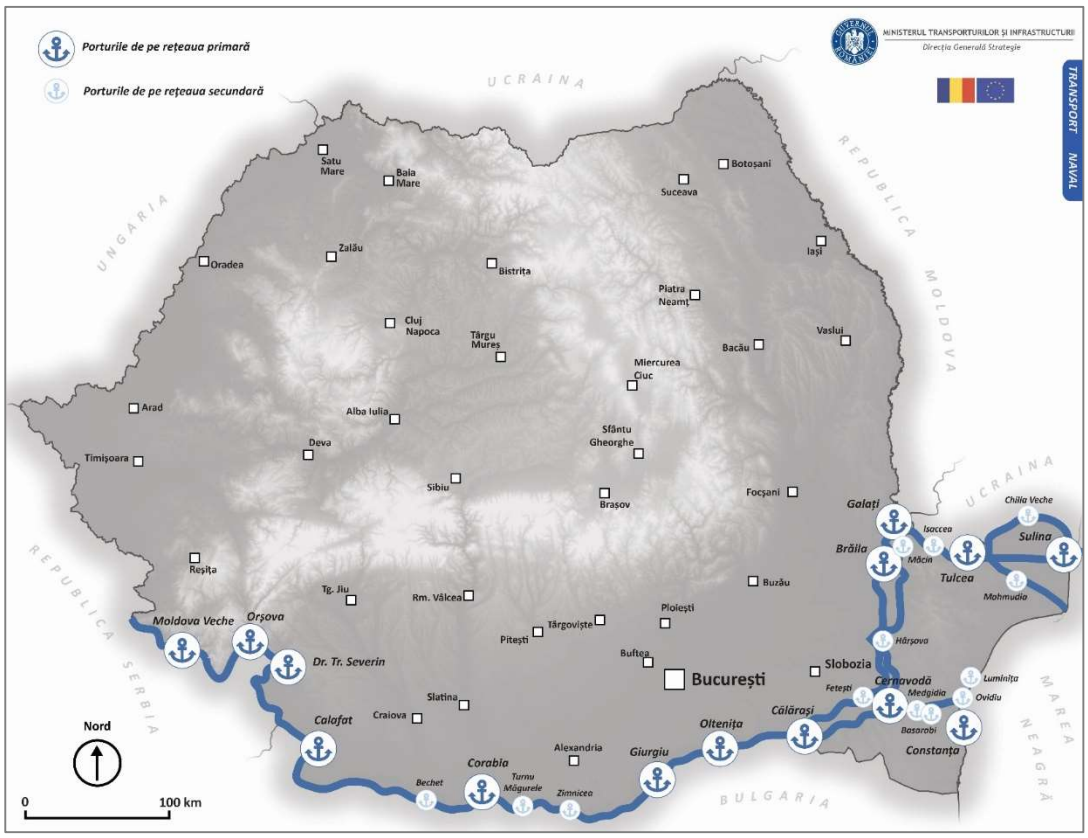

Figure 3 Map of investment projects related to the primary and secondary network - river ports and size

Given the many aspects of shipping, which cover both the waterway and the hydrotechnical infrastructure, as well as freight services and passengers, along with traffic safety and digitization issues, research is needed much more detailed information on the state of the sector and its development potential in the form of a Strategy of Development of Naval Transports, which once completed, will complete the provisions of this Investment Plan.

The Naval Transport Development Strategy will present the problems and needs of the naval sector, approaches and solutions, development priorities, actions to meet them and the resources allocated. It will capitalize on Romania's potential in the field of shipping, in order to support Romania's economic development and the Danube region.

The analysis will focus on how Romania can improve the performance of ships and ports, taking into account EU requirements, in which importance should be given to the supply of environmentally terrestrial energy), the strategy should consider measures to green all port operations (emissions, noise, pollution, etc.).

In order to encourage the navigability of the Danube in a sustainable way, an approach is needed combines sustainable infrastructure, alternative fuels and digitization, taking into account the ecological sensitivity of the Danube.

Proposals to amend the legal and institutional framework on how to manage maritime transport infrastructure with the objectives of integrating water transport with other modes of transport, preparation of intermodal port development plans and growth freight transport on the Danube by 15% by 2026 in a sustainable manner.

The strategy will establish:

- development directions, investment programs, specific waterway projects

inland and specific to each port;

- transport policy measures, including short-term, medium-term commercial policies and long;
- an analysis of the organization and operation of the shipping system in in terms of regulations, decision-making and responsibilities institutions with responsibilities in the naval field.

In order to establish the directions for the development of shipping, issues will be addressed regarding:

- greening the fleet;
- adapting to climate change and alternative energy sources;
- intermodal connections;
- digitization of ports and fleet.

The Naval Transport Development Strategy will be accompanied by an Action Plan and a Guide for prioritizing investments, which will form the basis of financing decisions this sector in the future, with a clear identification of managers, projects and sources of funding used to meet the objectives set. Government approval of the Strategy on Naval Transport has a milestone in the PNRR, with a deadline of Q2 2023.

Until the implementation of the above-mentioned Strategy, in order to determine the list of projects for the next 10 years, related to the strategic vision presented above, will start from the objectives specific, primary and secondary networks, as well as from projects already underway at the beginning year 2020.

For the period 2020-2030, the projects to ensure the vision and strategic objectives of The Investment Plan and the MPGT are presented in Table 2.4.3, the related list of projects inland waterways, taking into account primarily the projects under preparation in period 2014-2020. Thus for the inland waterway sector, the following projects make up the baseline scenario (Table 2.4.3)

5.2.3 Gap identification

A naval transport strategy was identified as a need by the professional associations in Romania (Constanta Port Business Association and Association of the River Ship Owners and Port Operators from Romania - AAOPFR) and was took over by MTI. MTI prepared the terms of reference and submitted an application form for financing it, within a project, from the Large Operational Program for Transport 2014 – 2020. The effectively preparation of this strategy has not started yet, but the term for finalizing it is the end of 2023 (the eligibility of the spending for the Large Operational Program for Transport 2014 – 2020)

- Gap 1: Naval transport strategy Level: 1

5.2.4 Recommendations to close the gaps

Gap 1: Naval Transport Strategy

Action: Elaboration of the Naval Transport Strategy

Implementation strategy: Elaboration of the Naval Transport Strategy.

Timeline: 2022 - 2023.

Participants (or stakeholders) responsible for and taking part in implementing necessary corrective actions: Ministry of Transport and Infrastructure.

The following table summarizes the gaps identified in (*title of strategy*), as well as recommended actions to close those gaps.

Gap level	Gap	Action (recommendation) to close the gap
	Naval Transport Strategy	Elaboration of the Naval Transport Strategy

Table 3: General Transport Master Plan of Romania gaps and actions to close them

6 Gap analysis summary

6.1 Gaps, actions to close the gaps and strategy inputs

Below table summarizes the gaps and actions to close the identified gaps.

Level	Objectives	Current state	Desired state	Gap	Actions to close the gap	Timeline for actions
	More focus on the maintenance of the IWT infrastructure	Maintenance works in port infrastructure and in the Danube fairway are not performed at a level in order which guarantee the high level of services provided by the private sector	Port infrastructure that ensures the safety of operation and high quality of services Fairway with minimum navigation depths all over the year	Plans for maintenance that are put in practice by the ports administrations. Plans for the maintenance to be put in practice	Action 1: elaboration of plans with responsibility and ensure the proper financing Action 2: Ensure the financing as requested, according to maintenance plans	Action 1: continuously Action 2: continuously
	Development of naval transport infrastructure	The General Transport Master Plan list all the Romania ports as necessary to be improved	Prioritisation of investments related to ports development	Naval Transport Strategy	Action 1: Elaboration of the Naval Transport Strategy	Action 1: 2022 - 2023
	Implementation of strategies through development projects	Strategies and financing sources identified	Resilient and efficient infrastructure	Implementation in time of infrastructure projects	Action 1: institutional capacity to be improved and stability in management and staff Action 2: improvement of the process of obtaining all necessary approvals Action 3: Contacting companies which are able to finalize the works in time	Action 1: continuously Action 2: applying Directive (EU) 2021/1187 ("Smart TEN-T") – 10.08.2023 Action 3: during the public procurement procedure for technical designs and works

Table 4: Gap analysis summary for Romania

7 Conclusions

Strategic documents related to transport at national level are already in place, they are updated and provide the directions for the development of transport infrastructure. They are presenting the needs of the society and the coherence with the EU policies. Strategic documents represent the general framework for future investments.

For the naval transport sector, as a specific one, still remain the gap representing a Naval Transport Strategy which will cover all the issues like transport infrastructure, needs for investments in ships to comply with the EU objectives to reduce pollution, reshaping, if necessary, of the institutional framework, the system of tariffs, links with transport corridors outside EU (especially with Caspian Sea).

The strategies are efficient when they are put in practice by projects, implemented in time. For the timely implementation of projects we see as strengths, the experience accumulated already in the management of EU projects, the Directive (EU) 2021/1187 on streamlining measures for advancing the realisation of the trans-European transport network (TEN-T) which will enter in force at the lates on 10.08.2023, continuous improvement of the public acquisition legislation.

Directive (EU) 2021/1187 apply to the permit-granting procedures required in order to authorise the implementation of projects that are part of pre-identified sections of the core networks. By 10 August 2023, each Member State shall designate, at the appropriate administrative level, the authorities that are to act as a designated authority, which will

- Be the point of contact for information for the project promoter and for other relevant authorities involved in the procedure leading to the authorising decision for a project
- provide the project promoter with the detailed application outline of the list of permits, decisions and opinions to be obtained by the project promoter during the permit-granting procedure, the details of the authorities and stakeholders to be involved in connection with the respective obligations, including during the formal phase of the public consultation, in accordance with the four-year maximum time-limit;
- if requested, provide guidance to the project promoter concerning the submission of all relevant information and documents, including all the permits, decisions and opinions which have to be obtained and provided for the authorizing decision.

A strategy does not prevent the realization / implementation of a project or an initiative that needs to be implemented on a short term, which bring benefits to the society and was not initially foreseen in the strategy. Usually, these cases are severely rare.

8 References

1. Romanian Parliament Decision no. 42/2021 for granting the trust to the Government
2. Government Decision no. 666/2016 approving General Transport Master Plan, modified through Government Decision no. 1312/2021;
3. PNRR - https://mfe.gov.ro/pnrr/