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Work Package 6

Activity 6.1

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Table of Contents

Table of Figures	3
No table of figures entries found.	3
Table of Tables.....	3
Executive summary	4
1 Introduction.....	7
1.1 Objectives of the activity 6.1	7
2 Scope of the report.....	9
3 Setting the objectives and measures to reach them	10
3.1 SMART objectives for port development strategy	10
3.2 Objectives and development measures as elements of the strategy and action plan ...	12
4 Cumulative SWOT based objectives and development measures.....	14
4.1 Austrian ports	14
4.2 Slovak ports.....	17
4.3 Hungarian ports	20
4.4 Croatian ports	23
4.5 Serbian ports	27
4.6 Romanian ports	30
4.7 Bulgarian ports.....	35
5 Common SWOT based objectives and development measures.....	38
6 Conclusions	50

Table of Figures

No table of figures entries found.

Table of Tables

Table 1: SWOT-based four types of strategies	12
Table 2: Inputs for the setting of objectives within four types of strategies	13
Table 3: Strategic development objectives for port industry in Austria	14
Table 4: Strategic objectives and necessary development measures for Austrian ports	15
Table 5: Strategic development objectives for port industry in Slovakia	17
Table 6: Strategic objectives and necessary development measures for Slovak ports	18
Table 7: Strategic development objectives for port industry in Hungary	20
Table 8: Strategic objectives and necessary development measures for Hungarian ports	21
Table 9: Strategic development objectives for port industry in Croatia	23
Table 10: Strategic objectives and necessary development measures for Croatian ports	25
Table 11: Strategic development objectives for port industry in Serbia	27
Table 12: Strategic objectives and necessary development measures for Serbian ports	28
Table 13: Strategic development objectives for port industry in Romania	30
Table 14: Strategic objectives and necessary development measures for Romanian ports ...	32
Table 15: Strategic development objectives for port industry in Bulgaria	35
Table 16: Strategic objectives and necessary development measures for Bulgarian ports	36
Table 17: Strategic development objectives for the Danube ports	38
Table 18: Non-refined strategic objectives and necessary development measures for Danube ports.....	40
Table 19: Refined strategic objectives and necessary development measures for Danube ports.....	45

Executive summary

Based on the carefully identified and analysed strengths, weaknesses, opportunities and threats of the national port industries, the project team has identified strategic development objectives and adequate development measures needed to ensure the implementation of the objectives. Both objectives and development (implementing) measures are identified on a dual level – national (based on “Cumulative” SWOT analysis) and regional (based on “Common” SWOT analysis) level. The latter is applicable to the entire port industry in the Danube Region.

In *Austria*, most of the development objectives are focused on the connection of ports with the new transport corridors from the Far East (China), or the so called “One Belt One Road” initiative, as well as the improvement of the railway connections, coupled with synergies with the rail cargo business. International (joint) lobbying for the continuous improvement of navigation conditions on the Danube, environmental management systems in the ports and optimization of the use of existing infrastructure are also seen as important objectives for Austrian ports. All these objectives require measures which involve strong cooperation with national and local authorities, marketing inventory and programs for specific company settlement and implementation of the concept guidelines for industrial development in ports, amongst others.

As for the *Slovak Republic*, development objectives are centred around intentions to improve existing port services, attraction of new companies with new users in ports, increased number of public-private partnership (PPP) initiatives in ports, improvement of multimodal facilities with the goal of increase of combined transportation and, last but not least, increase of reactivity to public funding opportunities. In order to implement these objectives a number of measures have been developed, including promotion of lease of unused land and facilities, increase of awareness of ports for local economy, introduction of minimum requirements for efficiency of port operators, use of alternative fuels and training and education.

Development objectives in *Hungary* include specific port training of existing and future port workers, attracting industries in port areas, increase of container and Ro-Ro business in ports, introduction of self-regulatory elements of the market to assure transparency and fair competition, innovative funding schemes, clear national strategy for port development and alike. Hungarian partners proposed to implement the objectives by taking steps in training and employment standards for ports, increased sharing of good practices, joint promotion and marketing, prioritization of investments in ports, including multimodal investments, etc.

Most important objectives of the port development strategy for *Croatian* ports focus on solving of ownership problems and clear separation of governing (port authorities) functions and port operating (port operators) functions, more efficient utilization of available funds for port construction and modernization, elaboration of high-quality port development plans as a basis for concessions and other PPP schemes and increased flexibility of concession agreements. These objectives are intended to be implemented by undertaking the following measures: finding suitable models and financial schemes for land issues and expropriation as

a legacy of former privatization schemes, prioritization of port investment projects, preparation of realistic master plans, facilitation of demand-based concession agreements, etc.

When *Serbian* ports are concerned, their most important strategic objectives are creation of conditions for fair competition and equal market opportunities (level playing field), facilitation of settlement of industry in the immediate hinterland of ports, introduction of ports as substantial parts of logistic chains, training of specialized workforce, rehabilitation and modernization of infrastructure and sustainable investments in port infrastructure through efficient PPP schemes. These objectives can be achieved by further licensing of port operators, introduction of single window procedures as much as possible, active participation in elaboration of spatial planning documentation, further digitalization of user friendly tools for multimodal transportation planning and port operations, knowledge sharing, promotion of concession-based port development, equipment modernization, more efficient utilization of external funds (EU co-financing) and joint promotion.

In case of *Romania*, objectives of port strategic development are concentrated around initiatives to attract maritime cargo from the Asia-Europe route to the Danube maritime ports, increase of container transshipment in the seaport of Constanta as a Danube region gate, improvement of port infrastructure, elaboration of port master plans, market based strategic development and development of port community. These objectives are planned to be achieved by implementing measures such as: investment in multimodal and transshipment logistics, participation in EU Integrated Maritime Policy projects, master plans implementation, enhancing the value of corporatized port management model, HR strategy as part of the contractual obligations to concession to port operators and active participation in maritime spatial planning in order to be harmonized with port development, inter alia.

Development objectives of *Bulgarian* inland ports are focused on improvement and modernization of port services, further development of port concessions in order to increase the efficiency of ports, attract non-public investments and private sector know-how, modernization of infrastructure enabling it to attract additional cargo flows, improvement of intermodal transport coordination in ports, keeping highly qualified port specialists in the port industry and introduction of an integrated transport system. Implementation of these objectives is planned to be facilitated by completion of concession procedures for remaining river ports, incentives for port modernization, tailor-made modernization measures for each port, realistic forecasting, specialized education and training for ports, integration of RIS services in Bulgaria with new and existing information/management systems in various transport modes, etc.

Finally, from the aspect of *common development of the entire port industry in the Danube area*, the following objectives, inter alia, have been agreed on multinational level: connection of ports to “One belt, one road” initiative, increased use of EU funds for port development and hinterland connection, further “greening” of ports and port operations, focus on multimodality, expansion of scope of services, optimization of land, facilities and available space, reduction of bureaucracy, mitigation measures to combat market volatility, creation of long-term port policies, fostering co-competition between ports and attraction of new markets.

The variety of measures aimed to facilitate the realization of these objectives is high, but focuses on measures such as: investigation of options for connecting the Danube ports to the corridors running from China, Central and West Asia via Port of Constanta, increase of project maturity for obtaining the co-funding from EU funds, identification of business and market segments where port can cooperate for the common good, active influence on drafting the CEF II regulation in order to draw attention to port problems, create joint commissions with spatial planning institutions in order to ensure that the port land is extended and that the land becomes available for industrial and logistic operators, not just port/terminal operators, undertake specialized investigations on market research, introduction of new services in ports, developing concepts of “flexible” inland ports and “flexible” concessions, investigate applicability of financial hedging tools in ports, harmonization of documents for ships and cargo, formulation of flexible strategies, functional and active association for port networking, application of IWT/Port Single Window Systems, promotion of ports as strategic objects of national transport infrastructure and protection of public interest and public domain in ports.

1 Introduction

All the findings of the previous WPs are reflected in this last work unit that sets-up the Danube Ports Network and provides the Danube Ports Development Strategy and its accompanying Action Plan. This permanent working platform for ports not only facilitates the know-how exchange between its members but also promotes and makes use of a set of jointly elaborated guidelines and recommendations that will be made available to more than 60 ports in the region.

The work is split into three activities and each contributes to facilitate communication and collaboration in the region and provides the necessary tools for an unhindered exchange of information between the members.

To begin with, the focus is to determine the objectives and goals necessary to address the challenges faced by the Danube ports (poor & obsolete infra-&super-structure, insufficient funding sources, diverse regulatory framework, etc.).

This will be achieved in act. 6.1 who will produce the Danube Port Development Strategy & Action Plan. Next, the efforts of the DAPhNE PPs will be concentrated on setting-up and enlarging the Danube Ports Network (6.2). The manner in which the network will run, its members and the means it will employ and promote the DAPhNE outputs and results will be clarified in this section. To ensure the network's durability, special documents like a Financing Model and a Business Plan will be elaborated. Furthermore, there will also be a work program drafted to set the short & mid-term priorities of the Danube Ports Network.

Last but not least, the pilot operation of the Danube Ports Network Organization will be tested in activity 6.3. The organization will host its initial meeting and will start implementing its yearly work plan. Special events like the Danube Port Days and the Port Policy Days will be organized as biennial events to facilitate networking possibilities within the port community and also help consolidate the market visibility of its members.

1.1 Objectives of the activity 6.1

The work performed in the previous WPs will serve as input for the elaboration of output 6.1. The information gathered on the port legislation, the public funding aspects, the administrative issues as well as the port development part will help better prepare the SWOT analysis for the Danube Ports (IWT & maritime ports). In line with this document a set of objectives and goals will be established for solving the challenges faced by the Danube Ports. These will also be showcased in the Danube Ports Development Strategy.

The consortium will also elaborate a report on the Role of Danube Ports now and in the future, taking into account the potential these locations have as multimodal hubs in the European Transport Network and how innovative technologies and concepts can help them consolidate this status.

In addition to these deliverables, the consortium members will also analyze the broader European framework containing strategic documents regarding the Danube region. The

investigations will be related to the EUSDR and the work performed by the secretariats of the various priorities as well as the Rhine-Danube Corridor.

The Danube Ports Development Strategy & the Action Plan should reflect the work performed by these units and provide implementation measures that take into account the opportunities available (valid funding schemes, new legislation in force, bureaucratic issues and other types of bottlenecks, etc.). The purpose of this activity is to produce a working document that is used at regional level. The Strategy & the Action Plan present the next steps to be taken to reach the EU objectives for the Danube region while also complying with the national port development needs & priorities of the riparian countries.

2 Scope of the report

The report sets the stage for the definition of the Danube port development strategy and action plan by identifying the strategic objectives as the basic pillars of the development strategy and by proposing adequate implementing measures in order to reach the objectives of the future development strategy. Identification of the strategy, that is, its objectives, is based on the dual approach: combination of internal strengths and weaknesses with external opportunities and threats on the one hand and, following the SMART principles on the other hand.

Project partners provided a (country-wide) Cumulative SWOT based matrix for the identification of strategies (strategic objectives) and a proposed set of development/implementing measures required to reach the objectives, that is, to implement the agreed strategy based on the identified strategic objectives.

On the basis of the identified objectives and corresponding implementing measures based on the Cumulative SWOT (D.6.1.1), with the help of the identified strengths, weaknesses, opportunities and threats in the Common SWOT (D.6.1.1), the study team proposed various strategic objectives (elements of the port development strategy) and the relevant implementing/development measures needed to reach the objectives and implement the strategy. **Objectives and necessary implementing measures will be explained in details during the elaboration of D.6.1.3 and output 6.1.**

3 Setting the objectives and measures to reach them

3.1 SMART objectives for port development strategy

Current situation in the ports of the Danube region was diagnosed in detail within the D.6.1.1 Danube Ports SWOT Analysis. Once identified on both *cumulative* (country by country) and *common* (common aspects of the entire region's port industry) levels, all strengths, weaknesses, opportunities and threats of the port industry of the Danube region form the basic elements of the port development strategy. All objectives of such strategy need to be based on these elements.

Nevertheless, before setting the stage for the objectives of the Danube ports development strategy, a few guidelines for the nature of the objectives must be drawn. In order to be realistic and reachable, development objectives should be "S.M.A.R.T.". The acronym stands for:

- **S**pecific (simple, sensible, significant).
- **M**asurable (meaningful, motivating).
- **A**chievable (agreed, attainable).
- **R**elevant (reasonable, realistic and resourced, results-based).
- **T**ime bound (time-based, time limited, time/cost limited, timely, time-sensitive).

S - Specific

When setting an objective, we need to be specific about what we want to accomplish. This is like the mission statement for desired objective. This is not a detailed list of measures needed to be undertaken in order to reach an objective, but it should include an answer to the typical guiding questions:

- **Who** – Clear identification of who needs to be involved to achieve the goal (this is especially important when multiple organizations, or even countries, are involved).
- **What** – Clear definition of what needs to be accomplished, giving as many details as possible/needed.
- **When** – This will be defined more specifically under the "time-bound" section of defining S.M.A.R.T. objectives, but at least a time frame should be set here.
- **Where** – This question may not always apply, but if there is a location or relevant event, it needs to be identified here.
- **Which** – Any related obstacles or requirements need to be identified here. This question can be beneficial in deciding if an objective is realistic.
- **Why** – What is the reason for the objective? Why this objective needs to be reached.

M - Measurable

What metrics will be used to determine if the objective is met? This makes an objective more tangible because it provides a way to measure progress. If it is a project that is going to take a

few months/years to complete, then some milestones need to be set, by considering specific tasks needed to be accomplished along the way.

A measurable objective should address questions such as:

- How much?
- How many?
- How will we know when it is accomplished?

A - Achievable

This focuses on how important an objective is and what can be done to make it possible (reachable). This may require developing new skills and changing attitudes, even national or supranational legislation. The objective is meant to inspire motivation, not discouragement. It is necessary to think how the objective could be accomplished and if the right tools and skills are available. If such tools and skills are currently not available, options of attaining them should be investigated and weighed (worth or not).

An achievable objective will usually answer questions such as:

- How can this objective be accomplished?
- How realistic is the objective, based on other constraints, such as financial factors?

R - Relevant

Relevance refers focusing on something that makes sense with the broader development goals. For example, if the objective is to launch a new project, service, terminal, technology, it should be something that is aligned with the overall development objectives.

A relevant objective can answer "yes" to these questions:

- Does this seem worthwhile?
- Is this the right time?
- Does this match other efforts/needs?
- Is it applicable in the current socio-economic environment?

T - Time-Bound

If an objective lacks realistic timing, probability of reaching it is low. Providing a target date(s) for "deliverables" is imperative. If the objective will take, say, three months/years to complete, it is useful to define what should be achieved half-way through the process or to establish milestones, as explained earlier. Providing time constraints also creates a sense of urgency and prevents taking implementation "for granted".

Summarizing, a time-bound objective should answer the following questions:

- When does it start?
- When does it end?

- What can be done in six weeks from now?
- What can be done in six months from now?

3.2 Objectives and development measures as elements of the strategy and action plan

Based on the SWOT analysis elaborated in D.6.1.1, various strategies can be made. Depending on the input elements of the strategy (what do we want to do?), four basic strategies (types of strategic objectives) can be identified, as shown in Table 1.

Table 1: SWOT-based four types of strategies

Internal factors \ External factors	Internal strengths	Internal weaknesses
External opportunities	SO STRATEGY (Maxi – Maxi)	WO STRATEGY (Mini – Maxi)
External threats	ST STRATEGY (Maxi – Mini)	WT STRATEGY (Mini – Mini)

(Source: iC consulenten)

Actionable strategies are formed combining information from two quadrants of the SWOT matrix in the following way:

- **Strengths–Opportunities (SO):** Use your internal strengths to take advantage of opportunities.
- **Strengths-Threats (ST):** Use your strengths to minimize threats.
- **Weaknesses-Opportunities (WO):** Improve weaknesses by taking advantage of opportunities.
- **Weaknesses-Threats (WT):** Work to eliminate weaknesses to avoid threats.

Table 2 below provides more details on how to work on four different types of strategies and formulate the port development objectives. All these strategies can be combined into one single strategy composed of all four or just one or of any possible combination.

Table 2: Inputs for the setting of objectives within four types of strategies

	Opportunities (external, positive)	Threats (external, negative)
	O1: O2: O3: O4: ... O _n	T1: T2: T3: T4: ... T _n
Strengths (internal, positive) S1: S2: S3: S4: ... S _n	Strength-Opportunity strategies Which of the port industry strengths can be used to maximize the opportunities that were identified? E.g. S1O1O3: S2O4: ... S _x O _y :	Strength-Threat strategies How can the port industry's strengths be used to minimize the identified threats? E.g. S1T1: S2S3T4: ... S _x T _y :
Weaknesses (internal, negative) W1: W2: W3: W4: ... W _n	Weakness-Opportunity strategies Which actions can be taken to minimize the port industry's weaknesses using the opportunities that were identified? E.g. W1O3O5: W2O1: ... W _x O _y :	Weakness-Threat strategies How can the port industry's weaknesses be minimized in order to avoid the threats? E.g. W1T1T3: W2T1: ... W _x T _y :

(Source: iC consulenten)

For the setting of the strategy objectives, any number of, say, strengths (S₁, S₂,...S_n) can be combined with any number of, say, opportunities (O₁, O₂,...O_n), so combinations like "S₂ S₅ S₇ O₂ O₄" or "S₁ S₃ O₁", or any other (strength-opportunity or strength-threat) can be made. The same principle is applied for weaknesses.

Putting it simply, the strategic development objectives define what we want to do, while the necessary development measures explain how we intend to do it.

4 Cumulative SWOT based objectives and development measures

4.1 Austrian ports

On the basis of the SWOT analysis (Cumulative SWOT, annexed to Deliverable D.6.1.1) of the port industry in Austria, as well as the methodology described in Chapter 3.2, Table 3 demonstrates various strategies (strategic objectives) of the Austrian port industry.

While the strategic objectives are just listed in the below table, detailed elaboration about the background and justification of objectives will be given in Deliverable D.6.1.3 Role of the Danube Ports Now and in the Future.

Table 3: Strategic development objectives for port industry in Austria

	<p>Opportunities (external, positive)</p> <p>O1: decarbonisation O2: new markets O3: eco-footprint philosophy O4: new city logistics O5: alternative fuels O6: real estate industry O7: e-commerce O8: physical internet O9: rail cargo attractiveness O10: agricultural focus O11: regionalization of supply chains O12: one belt – one road O13: containerization of cargo O14: short distance alternatives O15: modal split shift O16: infrastructure flexibility O17: new industrial clusters</p>	<p>Threats (external, negative)</p> <p>T1: problems with Danube navigability T2: stricter environmental regulations for ports T3: road and rail competition T4: containerization of cargo T5: vessel owner community T6: bureaucracy T7: emigration of industry T8: relation with the neighbourhood T9: outdated laws T10: decentralized production T11: public economy T12: lack of skilled workforce T13: international/ global economy T14: overcapacity T15: rail bottlenecks</p>
<p>Strengths (internal, positive)</p> <p>S1: economic Situation S2: good Location S3: heart of Europe (TEN-T network) S4: bridgehead function S5: logistic competence S6: hinterland hubs S7: modern standards S8: trimodality / intermodality S9: local traffic connections S10: transnational connections</p>	<p>Strength-Opportunity strategies</p> <p><i>Which of the port industry strengths can be used to maximize the opportunities that were identified?</i></p> <p>S3O12: connecting of Danube (+ports) with OBOR</p>	<p>Strength-Threat strategies</p> <p><i>How can the port industry's strengths be used to minimize the identified threats?</i></p> <p>S14T1: international lobbying for navigability of the Danube with best practice example of Austria</p>

<p>S11: qualified personnel S12: containerized business S13: experience in demand driven development S14: Austrian Danube Navigability S15: via donau as successful waterway administration</p>	<p>S12O15: development of empty container management on the Danube</p>	<p>S7T2: environmental management systems in the ports as part of new standards („new brand“)</p>
<p>Weaknesses (internal, negative)</p> <p>W1: low capacity utilization W2: capital intensity W3: business models W4: lack of expansion space W5: public economic situation W6: railway infrastructure W7: railway bottlenecks in Austria W8: low investment capacity of vessel owners W9: small market sector W10: insufficient lobbying for ports and IWT W11: dislocation of heavy industry W12: small strategic dimension W13: slow business development</p>	<p>Weakness-Opportunity strategies</p> <p><i>Which actions can be taken to minimize the port industry's weaknesses using the opportunities that were identified?</i></p> <p>W1O1: increase transshipment figures by new products regarding decarbonizing strategy (grants, ...)</p> <p>W6O12: improvement of railway connections for future connections of the ports with OBOR</p>	<p>Weakness-Threat strategies</p> <p><i>How can the port industry's weaknesses be minimized in order to avoid the threats?</i></p> <p>W6T3: development of future synergies through improvements in rail cargo business</p> <p>W4T4: new cooperation with the surroundings in order to make better utilization of port infrastructure without new areas</p>

(Source: EHÖO)

Below table summarizes the strategies (strategic objectives) and their corresponding development measures necessary to reach the objectives and implement the agreed strategy, whereas the objectives are elaborated on the basis of the methodology described in Chapter 3.1.

Table 4: Strategic objectives and necessary development measures for Austrian ports

Country	Strategic objectives	Necessary development measures
AT	S3O12: connecting of Danube (+ports) with OBOR	<ul style="list-style-type: none"> • elaborate concept with Austrian ministry
	S12O15: development of empty container management on the Danube	<ul style="list-style-type: none"> • check grant possibilities with ministry • contact to shipping companies to develop models • try to implement pilot operations
	S14T1: international lobbying for navigability of the Danube with best practice example of Austria	<ul style="list-style-type: none"> • enhance activities of PDA/I, via donau • international pressure (via EU/EFIP/TEN-T working group) to copy Austrian systems or bring similar measures • more involvement of owners of Austrian ports to create broad approach

	S7T2: environmental management systems in the ports as part of new standards („new brand“)	<ul style="list-style-type: none"> • start/enforce initiatives of the ports • development of a new brand via DPN (main target for DPN working plan) • reach certificates through projects
	W1O1: increase transshipment figures by new products regarding decarbonisation strategy (grants, ...)	<ul style="list-style-type: none"> • investigate new options or develop new grants with national and local ministries and agencies • start pilot actions with industry and spread out information
	W6O12: improvement of railway connections for future connections of the ports with OBOR	<ul style="list-style-type: none"> • standalone projects of the ports
	W6T3: development of future synergies through improvements in rail cargo business	<ul style="list-style-type: none"> • start combined meetings of IGÖD/PDA with rail industry • develop combined products
	W4T4: new cooperation with the surroundings to make better utilization of the port infrastructure without new areas	<ul style="list-style-type: none"> • development of marketing inventory and programs for specific company settlement (tailor-made for port usage) • realize the concept guidelines for industrial development in ports

(Source: EHÖO)

4.2 Slovak ports

On the basis of the SWOT analysis (Cumulative SWOT, annexed to Deliverable D.6.1.1) of the port industry in the Slovak Republic, as well as the methodology described in Chapter 3.2, Table 5 demonstrates various strategies (strategic objectives) of the Slovak port industry.

While the strategic objectives are just listed in the below table, detailed elaboration about the background and justification of objectives will be given in Deliverable D.6.1.3 Role of the Danube Ports Now and in the Future.

Table 5: Strategic development objectives for port industry in Slovakia

	Opportunities <i>(external, positive)</i>	Threats <i>(external, negative)</i>
	<p>O1: Growing trend in logistics and international goods transport</p> <p>O2: Increase production of cars and consumer goods in Slovakia</p> <p>O3: Orientation of the economy of the SR mainly on export</p> <p>O4: Potential for improvement of port services</p> <p>O5: Allocating of funds for the development of the Bratislava port within Operational Program 2014-2020(hereinafter "OP II")</p> <p>O6: Eventual extension of port services provided</p> <p>O7: Expiration of long-term lease contracts with port operator(s)</p> <p>O8: Finding new funding sources for port development</p>	<p>T1: Direct competition of rail and road transport</p> <p>T2: Dependence of the use of water transport on weather and hydrological conditions</p> <p>T3: Main port (Bratislava) is close to historical town center, which limits an industrial development</p>
Strengths <i>(internal, positive)</i>	Strength-Opportunity strategies	Strength-Threat strategies
<p>S1: Strategic geographic location in relation to the location of potential customers' connection to a network of inland waterways of international importance</p> <p>S2: Competitive shipping costs</p> <p>S3: Supporting the development of water transport by the European Union</p> <p>S4: Possibility of absorption of EU funds for development</p> <p>S5: All public ports are owned by one subject (VP a.s.)</p>	<p><i>Which of the port industry strengths can be used to maximize the opportunities that were identified?</i></p> <p>S101: Long-term strategy of general development of ports</p> <p>S304: Improvement of existing port services</p> <p>S203: Attracting new companies and customers into ports</p> <p>S204: Improvement of communication with public authorities on planned activities</p> <p>S205: Public Private Partnership projects with private sector</p> <p>S405: Proactive initiation of internal projects</p>	<p><i>How can the port industry's strengths be used to minimize the identified threats?</i></p> <p>S2T1: Increase of competitiveness of public ports</p>

Weaknesses (internal, negative)	Weakness-Opportunity strategies	Weakness-Threat strategies
<p>W1: Long transport times in water transport low transport capacities of an existing fleet</p> <p>W2: Weak awareness of the possibilities of use of water transport by logistics operators in Slovakia need for multiple transshipment</p> <p>W3: Limited use of EU funds due to Non-standard property relations in public ports</p> <p>W4: Current technical state of port infrastructure and superstructure</p> <p>W5: Port transshipping capacity insufficiently used</p> <p>W7: Assets managed by VP, a.s. under the Act No. 338/2000 Coll. described as "Priority Investment Assets"</p> <p>W8: Long-term lease contracts with port operator</p>	<p><i>Which actions can be taken to minimize the port industry's weaknesses using the opportunities that were identified?</i></p> <p>W507: Trade negotiations with port operators</p> <p>W706: Extension of services provided by VP a.s.</p>	<p><i>How can the port industry's weaknesses be minimized in order to avoid the threats?</i></p> <p>W2T1: Improvement of multimodality to promote combined transportation</p> <p>W3T1: Increase of reactivity related to public funding opportunities</p>

(Source: VPAS)

Below table summarizes the strategies (strategic objectives) and their corresponding development measures necessary to reach the objectives and implement the agreed strategy, whereas the objectives are elaborated on the basis of the methodology described in Chapter 3.1.

Table 6: Strategic objectives and necessary development measures for Slovak ports

Country	Strategic objectives	Necessary development measures
SK	S101: Strategy of general development of ports	<ul style="list-style-type: none"> • Elaboration of Master Plan and Feasibility Studies for ports in Bratislava and Komárno
	S304: Improvement of existing port services	<ul style="list-style-type: none"> • Waste management • Eco-friendly solutions (alternative fuel)
	S203: Attracting new companies and customers into ports	<ul style="list-style-type: none"> • Lease of currently not used property (land, storage capacities) • Pro-active marketing not only towards professionals but towards general public as well

Country	Strategic objectives	Necessary development measures
		in order to create positive image of inland transportation.
	S204: Improvement of communication with public authorities on planned activities.	<ul style="list-style-type: none"> • Regular coordination meeting with relevant public stakeholders / authorities
	S20508: Public Private Partnership projects with private sector	<ul style="list-style-type: none"> • Action based on results of ongoing PPP study
	S405: Proactive initiation of internal projects	<ul style="list-style-type: none"> • Trainings and education of internal staff
	S2T1: Increase of competitiveness W2T1: Improvement of multimodality to promote combined transportation	<ul style="list-style-type: none"> • Marketing and Promo activities • Increasing the transshipment capacities using the previously unused area owned by VP, a.s.
	W5W807: Trade negotiations with port operators	<ul style="list-style-type: none"> • Renegotiation after expiration of existing contracts • Determination of minimum transshipment performance of port operator(s)
	W3T1: Increase of reactivity related to public funding opportunities	<ul style="list-style-type: none"> • Continuous monitoring of information sources of public support in order to provide a prompt reaction by VP in case of suitable calls

(Source: VPAS)

4.3 Hungarian ports

On the basis of the SWOT analysis (Cumulative SWOT, annexed to Deliverable D.6.1.1) of the port industry in Hungary, as well as the methodology described in Chapter 3.2, Table 7 demonstrates various strategies (strategic objectives) of the Hungarian port industry.

While the strategic objectives are just listed in the below table, detailed elaboration about the background and justification of objectives will be given in Deliverable D.6.1.3 Role of the Danube Ports Now and in the Future.

Table 7: Strategic development objectives for port industry in Hungary

	<p>Opportunities (external, positive)</p> <p>O1: development of training and flexible working technologies (incl. e-learning, teleworking) O2: increasing container transport volume O3: increasing railway freight volume O4: increasing volume of potential ro-ro freight O5: higher efficiency in multimodality O6: the settlement of new industries with intermodal transshipment needs in Hungary O7: new funding sources for port development</p>	<p>Threats (external, negative)</p> <p>T1: limited Danube navigation conditions T2: competition of neighbouring ports T3: increasing exposure to flood T4: old and limited vessel fleet T5: unmaturing and unclarified regulatory system for state aid to ports T6: competitive disadvantage of waterborne transport in technological development compared to rail and road</p>
<p>Strengths (internal, positive)</p> <p>S1: strong networking of Hungarian ports (HFIP) S2: coverage of the Hungarian section of the Danube with inland ports S3: optimal geographical location of ports along the Danube S4: significant reserves in transshipment capacities S5: strong market position in the transshipment of cereals</p>	<p>Strength-Opportunity strategies <i>Which of the port industry strengths can be used to maximize the opportunities that were identified?</i></p> <p>S101: cooperative networks in HR development between Hungarian ports S306: attracting new companies and industries into ports S402: increasing container transshipment volume within ports S404: increasing ro-ro transshipment volume within ports</p>	<p>Strength-Threat strategies <i>How can the port industry's strengths be used to minimize the identified threats?</i></p> <p>S1T1: agreement on self-regulatory elements of the market to assure transparency and fair competition S1T5T6: representation of the common interests and cooperation with the government to improve the regulatory framework S1S2S3T6: joint promotion of IWW transportation for potential users</p>
<p>Weaknesses (internal, negative)</p> <p>W1: outdated and degraded port infrastructure (both basic and access infrastructure)</p>	<p>Weakness-Opportunity strategies <i>Which actions can be taken to minimize the port industry's weaknesses using the opportunities that were identified?</i></p>	<p>Weakness-Threat strategies <i>How can the port industry's weaknesses be minimized in order to avoid the threats?</i></p>

<p>W2: low storage capacities W3: lack of experienced human resource in port operations W4: limited scope of professional trainings in port management and logistics W5: limited multimodality in several ports W6: outdated and manual port logistics systems, poor IT support W6: exposure to seasonality W7: limited foreign language skills W8: lack of a comprehensive, long-term strategy for the port industry</p>	<p>W206: improved storage facilities in ports W3W701: human resource development of existing and to-be port staff W502: increasing container transshipment volume within ports W505: introducing new technologies for transshipment efficiency W2W3W5W607: introducing new funding schemes for port development W807: agreement on a comprehensive long-term strategy</p>	<p>W1T1: assuring a minimum of 2,5 draft along the Hungarian section of the Danube W5T6: improving multimodality to promote combined transportation W6T6: introducing port logistics information system</p>
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(Source: HFIP)

Below table summarizes the strategies (strategic objectives) and their corresponding development measures necessary to reach the objectives and implement the agreed strategy, whereas the objectives are elaborated on the basis of the methodology described in Chapter 3.1.

Table 8: Strategic objectives and necessary development measures for Hungarian ports

Country	Strategic objectives	Necessary development measures
HU	S101: Cooperative networks in HR development between Hungarian ports	<ul style="list-style-type: none"> • sharing good practices • introducing training and employment standards of ports
	S306: Attracting new companies and industries into ports	<ul style="list-style-type: none"> • joint promotion and marketing • cooperation with investment promotion agencies
	S402: Increasing container transshipment volume within ports W503: Increasing container transshipment volume within ports	<ul style="list-style-type: none"> • development of technologies for moving and storing containers • joint promotion and marketing • cooperation with investment promotion agencies
	S404: Increasing ro-ro transshipment volume within ports	<ul style="list-style-type: none"> • joint promotion and marketing • cooperation with investment promotion agencies
	S1T1: agreement on self-regulatory elements of the market to assure transparency and fair competition	<ul style="list-style-type: none"> • elaborating and introducing self-regulatory standards by the Hungarian Federation of Danube Ports
	S1T5T6: representation of the common interests and cooperation with the government to improve the regulatory framework	<ul style="list-style-type: none"> • continuous cooperation with relevant government bodies (including the European Commission and the State Aid Monitoring Office in Hungary)
	S1S2S3T6: joint promotion of IWW transportation for potential users	<ul style="list-style-type: none"> • joint promotion and marketing

Country	Strategic objectives	Necessary development measures
	W208: improved storage facilities in ports	<ul style="list-style-type: none"> • building new storage facilities in ports
	W3W701: human resource development of existing and to-be port staff	<ul style="list-style-type: none"> • elaboration of training programmes • implementation of training courses
	W505: Introducing new technologies for transshipment efficiency	<ul style="list-style-type: none"> • RTDI projects for new technologies • investing in new transshipment technologies
	W2W3W5W607: introducing new funding schemes for port development	<ul style="list-style-type: none"> • cooperation with government bodies to develop new schemes
	W807: agreement on a comprehensive long-term strategy	<ul style="list-style-type: none"> • comprehensive industrial assessment • strategy elaboration • identification of key projects
	W1T1: assuring min 2,5 draught along the Hungarian section of the Danube	<ul style="list-style-type: none"> • joint lobbying and cooperation with government bodies
	W5T6: improving multimodality to promote combined transportation	<ul style="list-style-type: none"> • multimodality investments in ports
	W6T6: introducing port logistics information system	<ul style="list-style-type: none"> • development of port specific IT systems • development of a national port management IT system

(Source: HFIP)

4.4 Croatian ports

On the basis of the SWOT analysis (Cumulative SWOT, annexed to Deliverable D.6.1.1) of the port industry in Croatia, Table 9 demonstrates various strategies (strategic objectives) of the Croatian port industry.

While the strategic objectives are just listed in the below table, detailed elaboration about the background and justification of objectives will be given in Deliverable D.6.1.3 Role of the Danube Ports Now and in the Future.

Table 9: Strategic development objectives for port industry in Croatia

	Opportunities (external, positive)	Threats (external, negative)
	<p>O1: Good position of port on the Danube</p> <p>O2: Navigability during the whole year</p> <p>O3: Accessibility - good connectivity with main road corridors and railway connection</p> <p>O4: Favourable geographical location on European transport corridor VII</p> <p>O5: Establishing the port area as 100% state owned and managed</p> <p>O6: Legal rules flexibility improvement in order to enable better market adjustments for port operators</p> <p>O7: Finding new financial investments opportunities (public-private partnership, EU funds)</p> <p>O8: Building new capacities in accordance with market demands</p> <p>O9: Designating the railway (subject of the future railway modernization project) for industrial purposes and returning this part into port area</p> <p>O10: Regulation of the port bank</p> <p>O11: Preparation of quality strategic and concession plans for port</p> <p>O12: Marketing activities improvement</p>	<p>T1: Lack of port capacities</p> <p>T2: Lack of the vertical quay</p> <p>T3: Limited space of the port area which is also in the process of decreasing</p> <p>T4: Various owners of the land within the port area</p> <p>T5: Lack of financial means for buying off the land</p> <p>T6: Long periods of realization</p> <p>T7: Lack of strategic mid-term development plans</p> <p>T8: Part of the port area – land together with infrastructure privately owned</p> <p>T9: The entrance to the port is not adjusted – it is difficult to manage the port traffic</p> <p>T10: Lack of long term agreements between port operators and port users</p>
Strengths (internal, positive)	Strength-Opportunity strategies	Strength-Threat strategies
S1: State interest – investment and management guarantee	<i>Which of the port industry strengths can be used to maximize the opportunities that were identified?</i>	<i>How can the port industry's strengths be used to minimize the identified threats?</i>

<p>S2: State interest protection by port authority – public service activities defined by the law S3: Port management – one body port authority S4: Port area – mostly state owned S5: Public port accessibility for all users under same conditions S6: Continuity of port services guaranteed S7: Long term experience of port services providing S8: Marketing activities improvement S9: EU projects experience S10: Educated staff of port authority</p>	<p>S1S2S3S4S5O5: Defining the port area of inland public ports 100% state owned and managed by the state body (port authorities). S8S9O7O8: Using the financial opportunities for achieving the funds for modernization & new port capacities.</p>	<p>S1S5S10T7T8T9: Preparation of high quality port development plans which shall be basis for concessions granting and PPP opportunities.</p>
<p>Weaknesses (internal, negative)</p> <p>W1: No stabile market and traffic for port operators – insecurity W2: Costs of buying off the land W3: Long expropriation procedures (when the owner refuses to sell his land) W4: Project Canal Danube – Sava – realization uncertainty – reflects directly on port development plans W5: Project Canal Danube – Sava – possibility of goods decreases and current Port location change W6: Railway – passenger traffic – instead of port development W7: Low quality of development plans which directly reflects on possibility for EU funds applying W8: Not fulfilling obligation of concession agreements by the operators in the sense of cargo amounts and investment plans W9: Old equipment of port operators and obsolescence of technologies W10: Long procedure for port area expanding</p>	<p>Weakness-Opportunity strategies</p> <p><i>Which actions can be taken to minimize the port industry's weaknesses using the opportunities that were identified?</i></p> <p>W8O6: Adjusting the special laws in order to make legal rules flexible as possible due to general regulations (concessions). W1W7O7: Strategic plans adjusted for PPP opportunities.</p>	<p>Weakness-Threat strategies</p> <p><i>How can the port industry's weaknesses be minimized in order to avoid the threats?</i></p> <p>W7W10T1T8T9: Strategic planning together with quality concession plans preparation in order to use port capacities to the maximum and make the concession agreements real and fulfilled.</p>

(Source: PAV)

Below table summarizes the strategies (strategic objectives) and their corresponding development measures necessary to reach the objectives and implement the agreed strategy,

whereas the objectives are elaborated on the basis of the methodology described in Chapter 3.1.

Table 10: Strategic objectives and necessary development measures for Croatian ports

Country	Strategic objectives	Necessary development measures
HR	S1S2S3S4S5O5: Defining the port area of inland public ports 100% state owned and managed by the state body (port authorities)	<ul style="list-style-type: none"> • Adjustment of the existing inland ports regulations to make preconditions for all port land within the public ports to be owned and managed by state port authorities • Solving ownership issues model development • Finding financial or other means to compensate to current land owners • Involvement of the state body – Ministry of the Sea, Transport and Infrastructure • Defining the timeframe for activity completion
	S8S9O7O8: Using the financial opportunities for achieving the funds for modernization & new port capacities	<ul style="list-style-type: none"> • Preparation of a high quality development plans • Education of the staff in Ministry of the Sea, Transport and Infrastructure and Port Authorities for project preparation and implementation • Ensuring the financial means for preparation activities • Defining realistic priorities and sustainable projects for financing • Synergy between Ministry and port administrations activities
	S1S5S10T7T8T9: Preparation of high quality port development plans which shall be basis for concessions granting and PPP opportunities.	<ul style="list-style-type: none"> • Preparation of the quality basis (master plans, feasibility studies) which shall be used for development plans of inland ports development • Defining the roles and timeframe for basis documents making
	W8O6: Adjusting the special laws in order to make legal rules flexible as possible due to general regulations (concessions).	<ul style="list-style-type: none"> • Adjusting the current Law on Inland Navigation and Ports in order to maximize concessions rules flexibility in inland ports especially in the terms for contract changing in accordance with market changes • Foresee concessions granting upon demand/request when it is possible and not in contrary with principle of competition

		<ul style="list-style-type: none"> • Defining the port area of inland ports 100% state owned as the measure for concession granting process be more efficient
	W1W707: Strategic plans adjusted for PPP opportunities	<ul style="list-style-type: none"> • Take into account PPP regulations taken into account when long-term and short-term strategic plans preparing • Ensuring the preconditions for PPP
	W7W10T1T8T9: Strategic planning together with quality concession plans preparation in order to use port capacities to the maximum and make the concession agreements real and fulfilled.	<ul style="list-style-type: none"> • Strategic plans and the basis for them should consist on realistic figures and possible scenarios • Strategic plans and concession plans should take into account market and economic environment needs and possibilities

(Source: PAV)

4.5 Serbian ports

On the basis of the SWOT analysis (Cumulative SWOT, annexed to Deliverable D.6.1.1) of the port industry in Austria, as well as the methodology described in Chapter 3.2, Table 11 demonstrates various strategies (strategic objectives) of the Austrian port industry.

While the strategic objectives are just listed in the below table, detailed elaboration about the background and justification of objectives will be given in Deliverable D.6.1.3 Role of the Danube Ports Now and in the Future.

Table 11: Strategic development objectives for port industry in Serbia

	Opportunities (external, positive)	Threats (external, negative)
	O1: Rhine Danube Core Corridor Network O2: One belt one road O3: Redevelopment of industrial production O4: Containerization O5: Modal shift O6: Ecological awareness	T1: Danube navigability T2: Unstable market and demand for port services T3: Road & Railway transportation T4: Different custom area T5: Lack of qualified staff T6: Global economy
Strengths (internal, positive)	Strength-Opportunity strategies	Strength-Threat strategies
S1: Port management model S2: Good strategic position S3: Good connection with national and international road and rail network S4: Railway tracks along the quay wall S5: Experienced and flexible Port Operators S6: Multimodality S7: Navigability of the Serbian section of the river Danube	Which of the port industry strengths can be used to maximize the opportunities that were identified? S1S2S5O1O2O3: High quality of port services through the fair competition and equal market opportunities. S2S3S6O1O2O3O4: Industrial development in the port immediate hinterland	How can the port industry's strengths be used to minimize the identified threats? S2S3S4S6T1T3T6: Become substantial part of the logistics chain S1S5T5: Human resource development
Weaknesses (internal, negative)	Weakness-Opportunity strategies	Weakness-Threat strategies
W1: Port infrastructure W2: Old equipment W3: Lack of equipment for waterside handling of containers and heavy weight cargo. W4: Lack of storage space for agricultural products (silo) W5: Focused mostly on agricultural products or certain industry in the hinterland	Which actions can be taken to minimize the port industry's weaknesses using the opportunities that were identified? W1O1O2O3O6: Development of the new infrastructure and redesign of the old infrastructure in ports	How can the port industry's weaknesses be minimized in order to avoid the threats? W1W2W3W5T1T2T3: Improvement of multimodality

	W2W3W4W5O1O2O3O4: Sustainable investments in port superstructure	
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(Source: PGA)

Below table summarizes the strategies (strategic objectives) and their corresponding development measures necessary to reach the objectives and implement the agreed strategy, whereas the objectives are elaborated on the basis of the methodology described in Chapter 3.1.

Table 12: Strategic objectives and necessary development measures for Serbian ports

Country	Strategic objectives	Necessary development measures
RS	S1S2S5O1O2O3: High quality of port services through the fair competition and equal market opportunities.	<ul style="list-style-type: none"> • Licensing additional operators where possible. • Close coordination with other authorities (custom, police, inspection...) and creation of single window procedure
	S2S3S6O1O2O3O64: Industrial development in the port immediate hinterland	<ul style="list-style-type: none"> • Close collaboration with Ministry of Economy, Local self- governments and other Governmental institutions in charge for industrial development. • Active role in the development of spatial planning documentation • Joint promotion activities
	S2S3S4S6T1T3T6: Become substantial part of the logistics chain	<ul style="list-style-type: none"> • Include more ports in core/comprehensive TEN-T network • Develop user friendly tools for multimodal transportation planning (logistics platform) • Joint promotion activities
	S1S5T5: Human recourse development	<ul style="list-style-type: none"> • Establish continuous education, from top and middle management to dockworkers and equipment operators • Organizing courses and trainings for the implementation and use of new technology and IT • Share good practice with other ports (from the network and external)
	W1O1O2O3O6: Development of the new infrastructure and redesign of the old infrastructure in ports	<ul style="list-style-type: none"> • Assess founding possibilities • Promote PPPs – Port Concessions • Prepare technical documentation
	W2W3W4W5O1O2O3O4: Sustainable investments in port superstructure.	<ul style="list-style-type: none"> • Introduce new technologies

		<ul style="list-style-type: none"> • Construction of necessary (missing) port storage facilities • Purchase of the new equipment
	W1W2W3W5T1T2T3: Improvement of multimodality	<ul style="list-style-type: none"> • Construction of missing port access railway/roads • Purchase of the necessary equipment • Develop user friendly tools for multimodal transportation planning (logistics platform) • Joint promotion activities

(Source: PGA)

4.6 Romanian ports

On the basis of the SWOT analysis (Cumulative SWOT, annexed to Deliverable D.6.1.1) of the port industry in Romania, as well as the methodology described in Chapter 3.2, Table 13 demonstrates various strategies (strategic objectives) of the Romanian port industry.

While the strategic objectives are just listed in the below table, detailed elaboration about the background and justification of objectives will be given in Deliverable D.6.1.3 Role of the Danube Ports Now and in the Future.

Table 13: Strategic development objectives for port industry in Romania

	Opportunities (external, positive)	Threats (external, negative)
	O1 Port location on the Silk Road - Europe - Asia Freight Route O2 Location on a major European transport corridor O3 Existence of European funds for the development of transport infrastructure O4 Regional European policies regarding the Danube and Black Sea O5 Exploitation of the opportunities for cooperation with the port of Constanta	T1 High delays in the development of the road infrastructure in Romania T2 Insufficient attractiveness level to invest in Romania T3 Additional costs generated by the transit of the Danube-Black Sea Canal T4 Low levels of Danube waters during periods of drought T5 Navigation restrictions on the Danube during the periods with negative temperatures T6 Low predictability legal and economic framework T7 Decline in industrial production on the region T8 Critical conditions of navigation on the Lower Danube, and on the River Danube T9 Competition with other ports
Strengths (internal, positive)	Strength-Opportunity strategies	Strength-Threat strategies
S1 The use of corporatized port management model, which allows for development in accordance with market requirements S2 Diverse connections with hinterland area (road, rail) S3 The availability of a wide range of ship and freight services	<i>Which of the port industry strengths can be used to maximize the opportunities that were identified?</i> S2S10S12S13O1: attracting road and rail freight traffic from the Asia-Europe route to the Danube ports (Pan-European Corridor VII/TEN-T) S4S9S12S13O1: attracting maritime cargo traffic from the Asia-Europe route to the Danube	<i>How can the port industry's strengths be used to minimize the identified threats?</i> S4T1: improving navigability on BG/RO common sector S1T2: port strategy development in accordance with market requirements S12T3: joint promotion of inland waterway transport S1T5: HR strategy

<p>S4 An active member in international and European organisations</p> <p>S5 Conditions for the safe operations of ships</p> <p>S6 The existence of modern waste reception facilities</p> <p>S7 Developing partnerships between port operators and the local authorities for port development</p> <p>S8 Port development projects in progress</p> <p>S9 Maritime and river ports</p> <p>S10 Rail connection: both European and Russian standard</p> <p>S11 Strategic position at the Eastern border of the EU</p> <p>S12 Located on the Pan-European Corridor VII Rhin – Main – Danube waterway, of the TEN-T network plant</p> <p>S13 Existence of Free Zone</p> <p>S14 Proactive management for promoting the development projects and applying the principle of partnership at the Port Community level</p>	<p>maritime ports (Pan-European Corridor VII/TEN-T)</p> <p>S1403: accessing the European funds for the development of port infrastructure</p> <p>S1104: enhance the value of the strategic position at the Eastern border of the EU within regional European policies (EUSDR etc.)</p> <p>S1205: increasing container transshipment volume from/to Constanța port</p>	
<p>Weaknesses (internal, negative)</p> <p>W1 The lack of a port community-integrated IT system which would allow for the fast and efficient exchange of information between the companies and the public and private sectors</p> <p>W2 The lack of a coherent port community, capable to answer promptly to the market request</p> <p>W3 The lack of logistics centres in the port area</p>	<p>Weakness-Opportunity strategies</p> <p><i>Which actions can be taken to minimize the port industry's weaknesses using the opportunities that were identified?</i></p> <p>W104: Implementation of IT systems</p> <p>W204: implementation of information exchange platforms (eg. DPN)</p> <p>W403: improving port infrastructure</p> <p>W504: Master Plan elaboration</p>	<p>Weakness-Threat strategies</p> <p><i>How can the port industry's weaknesses be minimized in order to avoid the threats?</i></p> <p>W1W2T1: assuring 2.5m draught on the BG/RO common sector</p> <p>W1W2T2: port community integrated IT system</p> <p>W8T3: Improving multimodality</p> <p>W1T4: Integrated IT system</p> <p>W2W5T5: development of port community and ports master plans</p>

<p>W4 The port infrastructure requires significant development investments</p> <p>W5 Lack of a masterplan for the port development</p> <p>W6 Limitations on conditions of navigation in the common sector Romanian-Bulgarian at certain times of the year</p> <p>W7 Limited supply of logistics services</p> <p>W8 Insufficient connections to hinterland</p> <p>W9 APDM does not have access to the RoRIS system</p> <p>W10 Insufficient dredging system for keeping water depth in port</p>		
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(Source: MT, ILR, APDM, MPAC)

Below table summarizes the strategies (strategic objectives) and their corresponding development measures necessary to reach the objectives and implement the agreed strategy, whereas the objectives are elaborated on the basis of the methodology described in Chapter 3.1.

Table 14: Strategic objectives and necessary development measures for Romanian ports

Country	Strategic objectives	Necessary development measures
RO	S2S10S12S1301: attracting road and rail freight traffic from the Asia-Europe route to the Danube ports (Pan-European Corridor VII/TEN-T)	<ul style="list-style-type: none"> • Developing cooperation with international multimodal transport operators in the context of international agreements on large combined transport lines; • Multimodality investments in ports; • Cooperation with western port authorities and development of Danube ports logistics system providing multimodal transshipment information; • Development of port infrastructure and superstructure
	S4S9S12S1301: attracting maritime cargo traffic from the Asia-Europe route to the	<ul style="list-style-type: none"> • Joint promotion within the Black Sea international organizations (e.g. BSEC - Black Sea Economic Cooperation);

	Danube maritime ports (Pan-European Corridor VII/TEN-T)	<ul style="list-style-type: none"> Investing in transshipment logistics; Participation in EU Integrated Maritime Policy projects;
S1403: accessing the European funds for the development of port infrastructure	<ul style="list-style-type: none"> Implementation of projects included in the master plan, in line with port community statements and market requirements Strong cooperation between beneficiaries, government bodies, managing authorities etc. 	
S1104: enhance the value of the strategic position at the Eastern border of the EU within regional European policies (EUSDR etc.)	<ul style="list-style-type: none"> Involvement in transborder cooperation projects Maximize the potential of the EU Danube Region Strategy 	
S1205: increasing container transshipment volume from/to Constanța port	<ul style="list-style-type: none"> Constanța port joint promotion Development of containers port facilities 	
S4T1: improving navigability on BG/RO common sector	<ul style="list-style-type: none"> Joint lobbying and cooperation with both government bodies and European organization Allocation of the necessary budgets for the maintenance by Bulgaria and Romania Implementation of projects for assuring the good conditions for navigation on long term 	
S1T2: port strategy development in accordance with market requirements	<ul style="list-style-type: none"> Enhance the value of corporatized port management model 	
S12T3: joint promotion of inland waterway transport	<ul style="list-style-type: none"> Joint promotion of TEN T Corridors and IWT transport including ports facilities 	
S1T5: HR strategy	<ul style="list-style-type: none"> Elaboration/implementation of training programmes/courses HR strategy as part of the contractual obligations to concession to port operators Identification of new competencies generated by the market development and delivering of training able to provide/ develop such competencies 	
W104: Implementation of IT systems	<ul style="list-style-type: none"> Proactive in EU digitalization policies and implementing multimodal IT Systems 	
W204: implementation of information exchange platforms (e.g. DPN)	<ul style="list-style-type: none"> Coordination and cooperation between stakeholders guided by regional European policies whose measures are supported from the resources already available according to an integrated approach 	

	W403: improving port infrastructure	<ul style="list-style-type: none"> • Accessing the European funds for the development of port infrastructure
	W504: Master Plan elaboration	<ul style="list-style-type: none"> • Ports master planning taking also into account the overall guidance specifications provided by the regional European policies
	W1W2T1: assuring 2.5m draught on the BG/RO common sector	<ul style="list-style-type: none"> • Joint lobbying and cooperation with both government bodies and European organization
	W1W2T2: port community integrated IT system	<ul style="list-style-type: none"> • Development the port ITS and national management of ITSs • Development of cybersecurity measures
	W8T3: Improving multimodality	<ul style="list-style-type: none"> • Multimodality investments connecting the hinterland
	W1T4: Integrated IT system	<ul style="list-style-type: none"> • Proactive in EU digitalization policies and implementing multimodal ITSs
	W2W5T5: development of port community and ports master plans	<ul style="list-style-type: none"> • Developing HR training strategies in line with port development plans (medium/long terms) and market requests identified by the port community (short terms) • Active participation in maritime spatial planning in order to be harmonized with port development

(Source: (Source: MT, ILR, APDM, MPAC)

4.7 Bulgarian ports

On the basis of the SWOT analysis (Cumulative SWOT, annexed to Deliverable D.6.1.1) of the port industry in Bulgaria, as well as the methodology described in Chapter 3.2, Table 15 demonstrates various strategies (strategic objectives) of the Bulgaria port industry.

While the strategic objectives are just listed in the below table, detailed elaboration about the background and justification of objectives will be given in Deliverable D.6.1.3 Role of the Danube Ports Now and in the Future.

Table 15: Strategic development objectives for port industry in Bulgaria

	<p>Opportunities (external, positive)</p> <p>O1 Optimization of the Danube waterway and increase in domestic and international river transport;</p> <p>O2 Good opportunities for attracting transit cargo from Western Europe and the Middle East, West and Central Asia;</p> <p>O3 Establishment of economic zones. Development of clusters to boost competitiveness; attracting foreign direct investment to increase employment;</p> <p>O4 Concession of terminals that are not currently granted on concession;</p> <p>O5 Modernization of the handling facilities and port infrastructure;</p> <p>O6 Improving security and safety systems in ports</p>	<p>Threats (external, negative)</p> <p>T1 Significant decrease in the overall river transport in Bulgaria</p> <p>T2 Risks connected with the active competition of neighbouring states in which transport projects are carried out - alternative to the routes through BG river and sea ports</p> <p>T3 Outflow of qualified port personnel</p> <p>T4 Potential new cost of implementation environmental legislation, negative public attitudes of the population on the territory of the area regarding the construction of waste treatment facilities.</p> <p>T5 Insufficient investment in port infrastructure and new handling technologies</p> <p>T6 Lack of resources for maintenance and repair.</p>
<p>Strengths (internal, positive)</p> <p>S1 Very favourable geographic location of the country;</p> <p>S2 Dense transport infrastructure – ports, roads, railways;</p> <p>S3 Good competition level;</p> <p>S4 Ongoing measures for port development;</p> <p>S5 River information system functioning;</p> <p>S6 Traditional local cargo flow that could not be deviated to competitors;</p> <p>S7 Free capacity for port services;</p> <p>S8 Highly qualified personnel.</p>	<p>Strength-Opportunity strategies</p> <p><i>Which of the port industry strengths can be used to maximize the opportunities that were identified?</i></p> <p>S1S2S7O2: Attract transit cargo by using the advantages of the BG transport system and location;</p> <p>S4O4O5: Improve and modernize port services;</p> <p>S8O5: Identify the most needed, appropriate & cost effective modernization in ports.</p>	<p>Strength-Threat strategies</p> <p><i>How can the port industry's strengths be used to minimize the identified threats?</i></p> <p>S4S8T3: Keep highly qualified personnel within port companies (before and after concession procedures)</p> <p>S4T5T6: Attract private investment in ports through successful concessions.</p>

Weaknesses (internal, negative) W1 Unsatisfactory condition of the port infrastructure and the connecting infrastructure; W2 High handling capacity for cargo types that are constantly decreasing; W3 Intermodal transport not developed enough; W4 Low percentage of goods transported by river (both domestic and international); W5 Unsatisfactory coordination between different modes of transport and lack of integrated transport systems; W6 Lack of satisfactory number and condition of the covered and specialized port warehouses; W7 Limited role of the private sector in terminals not granted on concession	Weakness-Opportunity strategies <i>Which actions can be taken to minimize the port industry's weaknesses using the opportunities that were identified?</i> W301: Increase the share of intermodal transport W1W2W605: Improve port infrastructure in order to keep current cargo flow and attract new types of cargo/ new clients W704: Rise the role of the private sector through concession of ports that are not already granted W506: Improvement of coordination between rail, river and automobile transport	Weakness-Threat strategies <i>How can the port industry's weaknesses be minimized in order to avoid the threats?</i> W1T5T6: Improve/ maintain in good working condition the port infrastructure W3T1T2: Develop intermodal transport in ports in order to become more competitive and "turn" the tendency for cargo flow decrease W7T5T6: Increase the role of the private sector W5T1T2: Introduction of an integrated transport system to increase competitiveness
(Source: BPICO)		

Below table summarizes the strategies (strategic objectives) and their corresponding development measures necessary to reach the objectives and implement the agreed strategy, while the objectives are elaborated on the basis of the methodology described in Chapter 3.1.

Table 16: Strategic objectives and necessary development measures for Bulgarian ports

Country	Strategic objectives	Necessary development measures
BG	Attract transit cargo by using the advantages of the BG transport system and location	<ul style="list-style-type: none"> • Marketing measures (promotion materials, TV commercials, conferences, meetings, active communication with target groups) taken by port operators; • Taking strategic decision on higher level – for cooperation between different types of transport, for effective logistic schemes; • Active communication with port authorities for purposeful strategic efforts
	Improve and modernize port services	<ul style="list-style-type: none"> • Actions taken by the government to finish the process of concession of BG river ports; • Keeping concessions in force on good level of fulfilment; • Encourage port operators to introduce modernizations by implementing incentives and system for evaluation;

	<ul style="list-style-type: none"> • Feedback from clients;
Identify the most needed, appropriate & cost effective modernization in ports	<ul style="list-style-type: none"> • Identification of modernization measures by collecting expert opinions from the qualified port personnel from each port; • Elaboration of financial, technical, marketing researches and forecasts;
Keep highly qualified personnel within port companies (before and after concession procedures)	<ul style="list-style-type: none"> • To introduce/ improve HR measures in the contracts with concessionaires and state owned port operators with regard to personnel: more attractive measures for motivation and low staff turnover – social benefits, good working conditions. For highly qualified staff – higher payment conditions, constant vocational training
Attract private investment in ports through successful concessions	<ul style="list-style-type: none"> • Actions taken by the government to finish the process of concession of BG river ports;
Increase the share of intermodal transport	<ul style="list-style-type: none"> • By taking measures for improvement of the navigability of the Danube river; • Boosting national and international economies that generate intermodal cargo; • Working on higher level (government, intermodal organizations and companies) to stimulate intermodality;
Improve port infrastructure in order to keep current cargo flow and attract new types of cargo/ new clients	<ul style="list-style-type: none"> • Actions taken by the government to finish the process of concession of BG river ports • Keeping concessions in force on good level of fulfilment • To follow quality oriented approach on port concessions • Granting joint concessions by the state and municipalities to assure investment in projects of bigger scale
Rise the role of the private sector through concession of ports that are not already granted	<ul style="list-style-type: none"> • Actions taken by the government to finish the process of concession of BG river ports
Introduction of an integrated transport system to increase competitiveness	<ul style="list-style-type: none"> • To integrate the River information system (BulRIS) with existing and new information/ management systems in the field of railway and automobile transport, control bodies, etc.

(Source: BPICO)

5 Common SWOT based objectives and development measures

On the basis of the Cumulative SWOT based objectives and development measures identified in Chapter 4, and after discussion with Project Partners from participating countries, followed by a joint agreement, Common SWOT based objectives are identified following the methodology described in Chapter 3.2 and are listed in Table 17.

Below strategies (strategic objectives) are agreed amongst Project Partners and are seen suitable for the port industry in the entire Danube Region. Thus, these identified objectives will form a backbone of the forthcoming Danube Port Development Strategy and Action Plan. As for the strategic objectives in the national port industries and their respective implementing measures, the development measures necessary for the implementation of the identified objectives accompany are elaborated for the entire Danube Region port industry.

Table 17: Strategic development objectives for the Danube ports

	Opportunities (external, positive)	Threats (external, negative)
	<p>O1 Introduction of businesses & industries into ports</p> <p>O2 Existence of European funds available for the development of transport infrastructure</p> <p>O3 Taking advantage of free capacity</p> <p>O4 Modal split shift</p> <p>O5 New industrial clusters / Development of clusters to boost competitiveness</p> <p>O6 Support of the European Union for the development of water transport</p> <p>O7 Alternative fuels / Eco-footprint philosophy /Decarbonizing strategy</p> <p>O8 Regional European policies regarding the Danube and Black Sea</p> <p>O9 “One belt one road” - new transport routes to/from Far East</p> <p>O10 New markets (biomass, LNG, high & heavy, Ro-Ro, containers, etc.)</p> <p>O11 Improving shipping conditions (Danube waterway, CEF projects)</p> <p>O12 Exploitation of the opportunities for cooperation with the port of Constanta as a gate seaport for all Danube ports.</p>	<p>T1 Problems with Danube navigability / hydrological conditions</p> <p>T2 Occurrence of bottlenecks on the fairway (insufficient depths) or in the road / railway connections</p> <p>T3 The direct competition of rail transport, as well as of the road transport</p> <p>T4 Competition between ports</p> <p>T5 Unstable market and demand for port services</p> <p>T6 Low predictability for traffic demand and economic framework</p> <p>T7 Bureaucracy</p> <p>T8 Dislocation of heavy industry</p> <p>T9 Emigration of industry / Decline in industrial production on the region</p> <p>T10 Economic situation in the Eastern Europe and global economy</p> <p>T11 Economic situation of the port operators and service providers</p> <p>T12 Stricter environmental regulations for ports / Potential new cost of implementation environmental legislation,</p> <p>T13 Insufficient investment in port infrastructure and new handling technologies</p> <p>T14 Lack of labour supply</p> <p>T15 Risk of delay in the implementation of large infrastructure projects</p> <p>T16 Small market sector</p>

	<p>013 Training of port professionals, training of labour force suitable for any port</p> <p>014 Research and design of modern equipment for handling in ports and for container traffic</p> <p>015 Modern standards and technology for transshipment in Austria and Hungary as an opportunity for know-how transfer to other countries.</p> <p>016 Co-opetition between ports</p>	
<p>Strengths (internal, positive)</p> <p>S1 Dense network of ports and transport infrastructure – ports, roads, railways in the region</p> <p>S2 Connections with the maritime transport</p> <p>S3 Shipping costs and low level of emissions related to the volume of cargo transported</p> <p>S4 Experienced and flexible Port Operators and logistic competence</p> <p>S5 Good competition level;</p> <p>S6 Multimodality. The majority of ports are trimodal</p> <p>S7 Proactive management for promoting the development projects and applying the principle of partnership at the Port Community level</p> <p>S8 Experience in demand driven development</p> <p>S9 Good planning of inland ports development</p> <p>S10 The availability of a wide range of ship and freight services</p> <p>S11 Experience for development of projects and ongoing measures for ports development</p> <p>S12 Qualified personnel</p> <p>S13 Consolidated port management models (includes: Port management model; The use of corporatized port management model, which allows for development in accordance with market requirements)</p> <p>S14 Member in international and European organisations</p> <p>S15 Waterway administration established and in charge for ensuring good navigation conditions.</p>	<p>Strength-Opportunity strategies</p> <p>Which of the port industry strengths can be used to maximize the opportunities that were identified?</p> <p>S109: Connect Danube ports with “One belt one road”</p> <p>S202: Increase use of EU funds for high quality hinterland connections</p> <p>S5016: Increase coepetition levels between ports, and especially between ports in proximity</p> <p>S702: Recognition of “cross-border” value of port projects (Change of Art. 3m in EU Reg. 1315/2013)</p> <p>S90305: Attract industrial facilities in or adjacent to port areas, where available</p> <p>S11010: Move towards specialized markets</p> <p>S12013014: Provide life-long training and specialization in modern port operation and management</p>	<p>Strength-Threat strategies</p> <p>How can the port industry’s strengths be used to minimize the identified threats?</p> <p>S7S11T12: Proactive attitude towards “greening” of ports</p> <p>S7S14T1T2: Secure and increase budget for removal of nautical hindrances and for improvement of rail and road hinterland connections</p> <p>S6S10T3: Focus on multimodality (by offering a wide range of road and rail services in port areas)</p> <p>S7T10T11: Use experience in project preparation to improve the situation by using public and EU funds</p> <p>S8T5T6: Prepare mitigation measures to combat market volatility and unpredictability</p> <p>S12T7: Use know-how and skills to reduce bureaucracy</p> <p>S10T8T9: Expand services to keep and attract industries in or adjacent to port areas</p>

<p>Weaknesses (internal, negative)</p> <p>W1 Low capacity utilization of available facilities in ports</p> <p>W2 Public economic situation</p> <p>W3 Old infrastructure and superstructure in many ports; old handling equipment and many ports do not have equipment for container handling</p> <p>W4 Needs for investments in the rail and road connections</p> <p>W5 Lack of inventory of realistic development needs and plans</p> <p>W6 Lack of long term port policies and port development strategies</p> <p>W7 Unsatisfactory coordination between different modes of transport and lack of integrated transport systems;</p> <p>W8 Lack of Port Community Systems (PCS)</p> <p>W9 Slow business development</p> <p>W10 Intermodal transport not developed enough</p> <p>W11 Insufficient lobbying for ports and IWT</p> <p>W12 Long transport times</p> <p>W13 Too strong competition from road and rail links to/from nearby ports for container transports, in terms of distances, prices and regular services.</p> <p>W14 Lack of resources for maintenance and repair.</p> <p>W15 Insufficient investment in port infrastructure and new handling technologies.</p>	<p>Weakness-Opportunity strategies</p> <p>Which actions can be taken to minimize the port industry's weaknesses using the opportunities that were identified?</p> <p>W103: Create redevelopment policies to optimize the facilities and available space.</p> <p>W3W402: Use the public and EU funds, as well as private funds (PPPs) to renew infrastructure, suprastructure, equipment and hinterland connections and prioritize investments</p> <p>W6013016: Create long-term port policies and strategies using skilled professionals and cooperation/networking possibilities</p> <p>W10013014015016: Use know-how transfer by cooperation and R&D initiatives</p> <p>W11016: Join forces for common cause in port development</p> <p>W1303010: Increase competitive position in respect to road and rail by attracting new markets and fostering multimodality</p>	<p>Weakness-Threat strategies</p> <p>How can the port industry's weaknesses be minimized in order to avoid the threats?</p> <p>W1T3: Optimize port capacity through pricing</p> <p>W1T5: Mitigate seasonal effects of cargo flows</p> <p>W3T8T9: Rehabilitation of port facilities (in order to lower the logistic costs and keep the industries in or near ports)</p> <p>W5T13: Matching the demand and development plans and seek for realistic investment options</p> <p>W6T11: Keep the strategy updated to maintain its relevance to port operators and port authorities</p> <p>W11T14: Increase lobbying through serious and institutionalized networking in order to create awareness of port importance and attract new skilled workforce</p> <p>W13T16: Foster economic policy, not political economics.</p>

(Source: iC)

Below table summarizes the strategies (strategic objectives) and their corresponding development measures necessary to reach the objectives and implement the agreed strategy, while the objectives are elaborated on the basis of the methodology described in Chapter 3.1 and agreed between Project Partners.

Table 18: Non-refined strategic objectives and necessary development measures for Danube ports

Objective SWOT code	Strategic objectives	Necessary development measures
S109	Connect Danube ports with "One belt one road"	<ul style="list-style-type: none"> Investigate options of connecting the Danube ports to the China-Central

Objective SWOT code	Strategic objectives	Necessary development measures
		<p>Asia–West Asia Corridor will run from Western China to Turkey (or other branches including the Port of Constanta as the entry hub for the Danube region)</p> <ul style="list-style-type: none"> • Present the possibilities of Danube ports to the relevant Chinese partners
S202	Increase use of EU funds for high quality hinterland connections	<ul style="list-style-type: none"> • Prioritize projects according to their maturity and socio-economic impact
S5016	Increase competition levels between ports, and especially between ports in proximity.	<ul style="list-style-type: none"> • Investigate business & market segments in which ports can cooperate for common interest, while competing in basic services
S702	Recognition of “cross-border” value of port projects (Change of Art. 3m in EU Reg. 1315/2013)	<ul style="list-style-type: none"> • Get actively involved in discussion on the proposal for the next Connecting Europe Facility (CEF II), published on 6 June 2018 • Issue a joint position paper as soon as possible
S90305	Attract industrial facilities in or adjacent to port areas, where available	<ul style="list-style-type: none"> • Create joint commissions with spatial planning institutions in order to ensure that the port land is extended and that the land becomes available for industrial and logistic operators, not just port/terminal operators • Lobby that the unused land adjacent to port areas is reserved for related activities (industry and logistics) where possible
S11010	Move towards specialized markets	<ul style="list-style-type: none"> • Undertake specialized investigations, market research and studies (e.g. for high & heavy, a.k.a. “project” cargo, LNG, biomass, vehicles, etc. • Make use of the objective of the proposed CEF II “adaption of the TEN-T network to military mobility needs”.
S12013014	Provide life-long training and specialization in modern port operation and management	<ul style="list-style-type: none"> • Organize annual courses on port operation, port technology, port planning and port management.

Objective SWOT code	Strategic objectives	Necessary development measures
S7S11T12	Proactive attitude towards “greening” of ports	<ul style="list-style-type: none"> • Regular calculation of GHG emissions in ports • Environmental certification • Compulsory shore-side electricity supply for vessels • LNG supply and bunkering stations for vehicles and vessels in ports • Electrification of port internal railways • Alternative powered handling equipment
S7S14T1T2	Secure and increase budget for removal of nautical hindrances and for improvement of rail and road hinterland connections	<ul style="list-style-type: none"> • Influence (lobby at) DG MOVE to secure sufficient budget for priority investments in inland waterways and ports
S6S10T3	Focus on multimodality (by offering a wide range of road and rail services in port areas)	<ul style="list-style-type: none"> • Attract road and rail operators to use ports as their hubs by incentivizing them or through attractive pricing schemes • Facilitate the use of port areas as specialized economic zone or free trade zones • Offer various auxiliary services in ports such as labelling, packing, distribution, de-waxing, consolidation, container repairs, vehicle parkings and/or garages • Make infrastructure adjustments facilitating intermodal operations
S7T10T11	Use experience in project preparation to improve the situation by using public and EU funds	<ul style="list-style-type: none"> • Engage experts to assist in preparation of high quality project proposals
S8T5T6	Prepare mitigation measures to combat market volatility and unpredictability	<ul style="list-style-type: none"> • Diversify services and focus on multipurpose terminals for non-sensitive goods • Develop a concept of “flexible inland port” • Develop a concept of “flexible” concessions • Investigate applicability of financial hedging tools in ports • Explore advantages of mobile cranes instead of quay-track mounted cranes

Objective SWOT code	Strategic objectives	Necessary development measures
S12T7	Use know-how and skills to reduce bureaucracy	<ul style="list-style-type: none"> • Use Port Community Systems • Exploit RIS based technologies for port planning • Increase use of paperless document processing • Harmonize ship and cargo document requirements (see FAL convention) • Investigate possibilities for IWT/Port Single Window Systems
S10T8T9	Expand services to keep and attract industries in or adjacent to port areas	<ul style="list-style-type: none"> • Facilitate development of logistic centres (logistic activity zones) in or adjacent to ports
W103	Create redevelopment policies to optimize the facilities and available space.	<ul style="list-style-type: none"> • Diagnose and locate overcapacities and optimize available space for diverse port and logistic functions • Optimize and/or modernize handling equipment • Investigate options for land recovery (e.g. unused port basins)
W3W4W14W1502	Use the public and EU funds, as well as private funds (PPPs) to renew infrastructure, suprastructure, equipment and hinterland connections and prioritize investments	<ul style="list-style-type: none"> • Create inventory of projects and prioritize them • Make sure priority projects have the highest level of maturity and impact • Submit highly relevant and mature projects for EU co-funding
W6013016	Create long-term port policies and strategies using skilled professionals and cooperation/networking possibilities	<ul style="list-style-type: none"> • Formulate flexible strategies and provide regular updates • Join forces to share knowledge and lobby for specialized courses in port strategies and port development.
W10013014015016	Use know-how transfer by cooperation and R&D initiatives	<ul style="list-style-type: none"> • Introduce tailor-made intermodal facilities and services, by knowledge sharing • Support R&D activities on intermodal services and logistics far from seaport hubs
W11W12011016	Join forces for common cause in port and shipping development	<ul style="list-style-type: none"> • Create functional and active association for port networking

Objective SWOT code	Strategic objectives	Necessary development measures
		<ul style="list-style-type: none"> • Make regular consultations for consensus-based lobbying at EU institutions • Maintain pressure for administrative facilitation of shipping
W1303010	Increase competitive position in respect to road and rail by attracting new markets and fostering multimodality	<ul style="list-style-type: none"> • Facilitate development of logistic centres (logistic activity zones) in or adjacent to ports (merge with measure for objective S10T8T9)
W1T3	Optimize port capacity through pricing.	<ul style="list-style-type: none"> • Ensure flexibility and adaptability of pricing schemes to combat congestion and underutilization
W1T5	Mitigate seasonal effects of cargo flows (similar to S8T5T6)	<ul style="list-style-type: none"> • Support research work on seasonal effects in order to increase predictability (and thus optimize facilities) • Consider financial hedging options (closely link with S8T5T6 objective measures)
W3T8T9	Rehabilitation of port facilities (in order to lower the logistic costs and keep the industries in or near ports).	<ul style="list-style-type: none"> • Reconstruct sloped quay walls into vertical ones • Facilitate of unused “second row” land for industrial and/or logistic use
W5T13	Matching the demand and development plans and seek for realistic investment options.	<ul style="list-style-type: none"> • Apply methodologies for flexible port planning, design and operation. • Facilitate private involvement in port financing
W6T11	Keep the strategy updated to maintain its relevance to port operators and port authorities.	<ul style="list-style-type: none"> • Organize annual strategy update conferences • Adapt the strategy to changed conditions
W11T14	Increase lobbying through serious and institutionalized networking in order to create awareness of port importance and attract new skilled workforce.	<ul style="list-style-type: none"> • Facilitate wider social acceptance and awareness of ports • Discuss with universities and education centres to develop highly specialized port curricula • Organize own courses (closely link with measure for objective S12013014)

Objective SWOT code	Strategic objectives	Necessary development measures
W13T16	Foster economic policy, not political economics.	<ul style="list-style-type: none"> • Promote ports as strategic objects of national transport infrastructure • Protect public interest and public domain in ports • Promote efficient PPP structures in ports

(Source: iC)

Table 19 contains slightly refined and re-ordered objectives in order to group them thematically.

Table 19: Refined strategic objectives and necessary development measures for Danube ports

Objective SWOT code	Strategic objectives	Necessary development measures
S109	Connect Danube ports with new routes and new markets /“One belt one road”/	<ul style="list-style-type: none"> • Investigate options of connecting the Danube ports to the China–Central Asia–West Asia Corridor will run from Western China to Turkey (or other branches including the Port of Constanta as the entry hub for the Danube region) • Present the possibilities of Danube ports to the relevant Chinese partners
W1303010 (Merged with S10T8T9)	Increase competitive position in respect to road and rail by attracting new markets and fostering multimodality	<ul style="list-style-type: none"> • Facilitate development of logistic centres (logistic activity zones) in or adjacent to ports (merge with measure for objective S10T8T9)
S202	Increase use of EU funds for high quality hinterland connections	<ul style="list-style-type: none"> • Prioritize projects according to their maturity and socio-economic impact
S7T10T11	Use experience in project preparation to improve the situation by using public and EU funds	<ul style="list-style-type: none"> • Engage experts to assist in preparation of high quality project proposals
W3W4W14W1502	Use the public and EU funds, as well as private funds (PPPs) to renew infrastructure, suprastructure, equipment and hinterland connections and prioritize investments	<ul style="list-style-type: none"> • Create inventory of projects and prioritize them • Make sure priority projects have the highest level or maturity and impact • Submit highly relevant and mature projects for EU co-funding

Objective SWOT code	Strategic objectives	Necessary development measures
S702	Recognition of “cross-border” value of port projects (Change of Art. 3m in EU Reg. 1315/2013)	<ul style="list-style-type: none"> • Get actively involved in discussion on the proposal for the next Connecting Europe Facility (CEF II), published on 6 June 2018 • Issue a joint position paper as soon as possible
S5016	Increase cooperation levels between ports, and especially between ports in proximity.	<ul style="list-style-type: none"> • Investigate business & market segments in which ports can cooperate for common interest, while competing in basic services
S90305	Attract industrial facilities in or adjacent to port areas, where available	<ul style="list-style-type: none"> • Create joint commissions with spatial planning institutions in order to ensure that the port land is extended and that the land becomes available for industrial and logistic operators, not just port/terminal operators • Lobby that the unused land adjacent to port areas is reserved for related activities (industry and logistics) where possible
S11010	Move towards specialized markets	<ul style="list-style-type: none"> • Undertake specialized investigations, market research and studies (e.g. for high & heavy, a.k.a. “project” cargo, LNG, biomass, vehicles, etc. • Make use of the objective of the proposed CEF II “adaption of the TEN-T network to military mobility needs”.
S12013014	Provide life-long training and specialization in modern port operation and management	<ul style="list-style-type: none"> • Organize annual courses on port operation, port technology, port planning and port management.
S7S11T12	Proactive attitude towards “greening” of ports	<ul style="list-style-type: none"> • Regular calculation of GHG emissions in ports • Environmental certification • Compulsory shore-side electricity supply for vessels • LNG supply and bunkering stations for vehicles and vessels in ports • Electrification of port internal railways • Alternative powered handling equipment

Objective SWOT code	Strategic objectives	Necessary development measures
S7S14T1T2	Secure and increase budget for removal of nautical hindrances and for improvement of rail and road hinterland connections	<ul style="list-style-type: none"> • Influence (lobby at) DG MOVE to secure sufficient budget for priority investments in inland waterways and ports
S6S10T3	Focus on multimodality (by offering a wide range of road and rail services in port areas)	<ul style="list-style-type: none"> • Attract road and rail operators to use ports as their hubs by incentivizing them or through attractive pricing schemes • Facilitate the use of port areas as specialized economic zone or free trade zones • Offer various auxiliary services in ports such as labelling, packing, distribution, de-waxing, consolidation, container repairs, vehicle parkings and/or garages • Make infrastructure adjustments facilitating intermodal operations
S8T5T6	Prepare mitigation measures to combat market volatility, seasonal effects and unpredictability	<ul style="list-style-type: none"> • Diversify services and focus on multipurpose terminals for non-sensitive goods • Develop a concept of “flexible inland port” • Develop a concept of “flexible” concessions • Investigate applicability of financial hedging tools in ports • Explore advantages of mobile cranes instead of quay-track mounted cranes • Support research work on seasonal effects in order to increase predictability (and thus optimize facilities)
S12T7	Use know-how and skills to reduce bureaucracy	<ul style="list-style-type: none"> • Use Port Community Systems • Exploit RIS based technologies for port planning • Increase use of paperless document processing • Harmonize ship and cargo document requirements (see FAL convention)

Objective SWOT code	Strategic objectives	Necessary development measures
		<ul style="list-style-type: none"> Investigate possibilities for IWT/Port Single Window Systems
W103	Create redevelopment policies to optimize the facilities and available space.	<ul style="list-style-type: none"> Diagnose and locate overcapacities and optimize available space for diverse port and logistic functions Optimize and/or modernize handling equipment Investigate options for land recovery (e.g. unused port basins)
W6013016	Create long-term port policies and strategies using skilled professionals and cooperation/networking possibilities	<ul style="list-style-type: none"> Formulate flexible strategies and provide regular updates Join forces to share knowledge and lobby for specialized courses in port strategies and port development.
W10013014015016	Use know-how transfer by cooperation and R&D initiatives	<ul style="list-style-type: none"> Introduce tailor-made intermodal facilities and services, by knowledge sharing Support R&D activities on intermodal services and logistics far from seaport hubs
W11W12011016	Join forces for common cause in port and shipping development	<ul style="list-style-type: none"> Create functional and active association for port networking Make regular consultations for consensus-based lobbying at EU institutions Maintain pressure for administrative facilitation of shipping
W1T3	Optimize port capacity through pricing.	<ul style="list-style-type: none"> Ensure flexibility and adaptability of pricing schemes to combat congestion and underutilization
W3T8T9	Rehabilitation of port facilities (in order to lower the logistic costs and keep the industries in or near ports).	<ul style="list-style-type: none"> Reconstruct sloped quay walls into vertical ones Facilitate of unused “second row” land for industrial and/or logistic use
W5T13	Matching the demand and development plans and seek for realistic investment options.	<ul style="list-style-type: none"> Apply methodologies for flexible port planning, design and operation. Facilitate private involvement in port financing

Objective SWOT code	Strategic objectives	Necessary development measures
W6T11	Keep the strategy updated to maintain its relevance to port operators and port authorities.	<ul style="list-style-type: none"> • Organize annual strategy update conferences • Adapt the strategy to changed conditions
W11T14	Increase lobbying through serious and institutionalized networking in order to create awareness of port importance and attract new skilled workforce.	<ul style="list-style-type: none"> • Facilitate wider social acceptance and awareness of ports • Discuss with universities and education centres to develop highly specialized port curricula • Organize own courses (closely link with measure for objective S12O13O14)
W13T16	Foster economic policy, not political economics.	<ul style="list-style-type: none"> • Promote ports as strategic objects of national transport infrastructure • Protect public interest and public domain in ports • Promote efficient PPP structures in ports

(Source: iC)

6 Conclusions

All inland ports have (or aim to have) a triple function in the transportation chain and in the overall transportation network. First of all, ports are (or at least they should be) efficient transshipment nodes where cargo is transhipped from inland waterways (IWW) to land modes of transport (road and rail) and vice-versa, as well as stored between two different legs of transport, or stored as stock. Second function of inland ports is of wider scope and involves its nodal function both in the transport network and in the local/regional economy. Due to the fact that cargo and ships require and attract not only basic port services but also value added services, the ports can easily become a desirable location for settlement of port-related industries, logistic industries and even manufacturing industries who want to be directly on the most efficient inland waterway transport corridors and in or near ports as most important nodes of the entire transportation network. Last, but not least, the third function of an interface between long distance transport and the urban last mile, is, unfortunately, not sufficiently developed in the Danube region. Nevertheless, thanks to their location, ports can bring the urban freight within the port cities or near them, restricting the road transport to the “last mile”, reducing the road transport congestion.

One of the most important roles of inland ports is their role in the multimodal transport chain due to their location close to logistic centres, industrial or agricultural areas and large consumer markets such as large cities. Taking into account the fact that ports are nodal points for at least two, and in the most cases three transport modes (IWW, road and rail), ports are attractive not only for their core transport modes (IWT or maritime transport), but also for rail and road transport companies because ports are important generators of their cargo flows and businesses.

Increasing the efficiency of management and operations of ports (governance, transshipment, storage, handling and value added services) as well as modernization of ports’ infrastructure, suprastructure and hinterland connections would enable a win-win situations for all port stakeholders, while doing absolutely no harm to anyone whatsoever. This is why the position of ports is unique and represent an opportunity that should be taken immediately, for the benefit of all actors in the transport and supply chains including maritime and inland waterway transport. Nevertheless, all these enhancements require funds, which tend to be scarce if only public sources are considered. In this view, an increased level of public-private partnerships (PPP) is needed in order to optimize investments not only on demand basis, but also on business generating capabilities of ports and their operators. Apart from funding, port development requires multidisciplinary approach: engineering, management, education and training (human resources and skilled workforce) and efficient planning and land use. This is why strategic development objectives include all this aspects and measures needed to reach such objectives.

Last, but not least, in order to be sustainable, port development needs to reduce its environmental footprint. In this view, “greening” of port operations not only a must, but also within reach, thanks to the new technologies (alternative fuels, energy use from renewable

sources, shore-side electricity supply, etc.). Objectives involving “greening” of ports are also included in the list of strategic development objectives.