

Report WP3-Act. 3.1 Results from Regional Workshop

Partner Report
Stakeholder Process
Lower Austria & Vienna, Austria

Document Control Sheet

Project	DBS Gateway Region – Regional and Transport Development in the Danube-Black Sea Region towards a Transnational Multiport Gateway Region
Code	DTP1-050-3.1
Funds	ERDF, IPA
Document Title	Partner Report Stakeholder Process Lower Austria & Vienna, Austria
Available Languages	English
Version	V1.0
Date	31 July 2017
Number of Pages	21
Authors	Christian Ecker
Contributors	Irene Steinacher, Norbert Sedlacek
Checked by	Christina Narval
Approved by	Christian Popp, Rainer Müller



Contents

thors	4
rms and abbreviations	4
t of national stakeholders invited to participate in the Regional Workshop	5
Introduction	5
sults of the Regional Workshop:	7
ecutive summary	7
Transport logistics requirements and regional value added services in the Eack Sea Region	
i. Major challenges that companies face when transporting goods on the I River;	
ii. How low should be the price of the cargo transportation and handling of Danube River in comparison to the road and rail, in order to choose this training of the others?	nsport
iii. How do you perceive the landlord ownership structure of the Danube p your country?	
iv. In what time frame do you expect some significant changes in the Danulogistics?	
Potential of shifting transport modes	11
General Aspects Concerning Cargo Potential for the Inland Waterway Danuk River	
v. Do you expect the cargo flows on the Danube to increase in the next 10-years?	
vi. If yes, what type of cargo you expect to increase and how much (in perc	ent)? 13
vii. What origin and destination of the increased cargo flows do you foresee	?14
Barriers for the business, forecasts and recommendations	16
viii. Measures necessary to increase the attractiveness of the IWT in the DBS region;	
ix. What are main reasons for the underdeveloped IWT on the Danube Riv	er;19
Annex	
Results of the online survey	21
Minutes and results of the regional workshop on 28 June 2017 in Vienna	21

Authors

Main author(s): Mag. Christian Ecker, MBA

LogPIN Managementberatung Hütteldorferstraße 253a,

A-1140 Wien

Tel.: +43 676 4288377

E.mail: christian.ecker@logpin.at

http://www.logpin.at

Contributing author(s): Mag. Irene Steinacher, DI Norbert Sedlacek

HERRY Consult GmbH Argentinierstraße 21

A-1040 Wien

Tel.: +43 1 504 12 58 Fax: +43 1 504 35 36 E-mail: office@herry.at http://www.herry.at Firmenbuch FN 233778 t

Terms and abbreviations

IWT	Inland Waterway Transport
DBS	Danube Black Sea
DBS GR	Danube Black Sea Gateway Region

List of national stakeholders invited to participate in the Regional Workshop.

Introduction

The stakeholder involvement process for Lower Austria and Vienna was carried out in four steps:

- 1. Pre-Workshop Expert-Interviews
- 2. Interactive Workshop
- 3. Online Survey (Questionnaire)
- 4. Post-Workshop Expert-Interviews

The process started on 22 May 2017 and ended on 31 July 2017 by handing in the final report.

Numerical data of the stakeholder process in Austria:

- 24 participants at the regional Workshop on 28 June 2017 in Vienna
- 10 personal interviews
- 28 completed online questionnaires

Altogether 38 organisations in Austria were directly involved in the stakeholder process.

PARTICIPATING STAKEHOLDER ORGANISATIONS IN AUSTRIA:

1	AEC Consult GmbH
2	AGRANA Beteiligungs-AG
3	AIT Austrian Institute of Technology
4	ARGE Donauländer, Hafen Wien, Pro Danube Austria,
5	Austria Tech
6	BMVIT Bundesministerium für Verkehr, Innovation und Technologie *
7	Christof Group
8	ecoplus. Niederösterreichs Wirtschaftsagentur GmbH *
9	ELK Fertighaus GmbH
10	Ennshafen Niederösterreich GmbH
11	Gerocret
12	grampetcargo Austria GmbH
13	Hafen Wien *
14	HIAG - Hoedlmayr International AG
15	Internationaler Verband der Tarifeure (IVT)
16	Logistikum FH OÖ Forschungs & Entwicklungs GmbH

planning) * Mierka Donauhafen Krems Disterreichische Bundesforste AG Quehenberger Logistics GmbH Rail Cargo Austria AG Rail Cargo Logistics, Krems Ruy (Regional Government of Lower Austria) * RwA Raiffeisen Ware Austria AG SCW Consult Siemens AG Österreich Stora Enso Wood Products GmbH Tina Vienna GmbH * TTS (Transport Trade Services) GmbH Via Donau Österreichische Wasserstraßen Gesellschaft mbH Voith Hydro GmbH & Co KG WiencOnt GmbH Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG Wirtschaftskammer Niederösterreich Zentralverband der Spediteure	17	MA18 (Municipality of Vienna, Municipal Department for Urban development and		
 Österreichische Bundesforste AG Oösterreichischer Städtebund * Quehenberger Logistics GmbH Rail Cargo Austria AG Rail Cargo Logistics, Krems RWA Raiffeisen Ware Austria AG SCW Consult Siemens AG Österreich Stora Enso Wood Products GmbH Thinkport Vienna Tina Vienna GmbH * TTS (Transport Trade Services) GmbH VFI GmbH Via Donau Österreichische Wasserstraßen Gesellschaft mbH Voith Hydro GmbH & Co KG Wiencont GmbH Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG Wirtschaftskammer Niederösterreich 		planning) *		
20 Österreichischer Städtebund * 21 Quehenberger Logistics GmbH 22 Rail Cargo Austria AG 23 Rail Cargo Logistics, Krems 24 RU7 (Regional Government of Lower Austria) * 25 RWA Raiffeisen Ware Austria AG 26 SCW Consult 27 Siemens AG Österreich 28 Stora Enso Wood Products GmbH 29 Thinkport Vienna 30 Tina Vienna GmbH * 31 TTS (Transport Trade Services) GmbH 32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	18	Mierka Donauhafen Krems		
21 Quehenberger Logistics GmbH 22 Rail Cargo Austria AG 23 Rail Cargo Logistics, Krems 24 RU7 (Regional Government of Lower Austria) * 25 RWA Raiffeisen Ware Austria AG 26 SCW Consult 27 Siemens AG Österreich 28 Stora Enso Wood Products GmbH 29 Thinkport Vienna 30 Tina Vienna GmbH * 31 TTS (Transport Trade Services) GmbH 32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	19	Österreichische Bundesforste AG		
22 Rail Cargo Austria AG 23 Rail Cargo Logistics, Krems 24 RU7 (Regional Government of Lower Austria) * 25 RWA Raiffeisen Ware Austria AG 26 SCW Consult 27 Siemens AG Österreich 28 Stora Enso Wood Products GmbH 29 Thinkport Vienna 30 Tina Vienna GmbH * 31 TTS (Transport Trade Services) GmbH 32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	20	Österreichischer Städtebund *		
23 Rail Cargo Logistics, Krems 24 RU7 (Regional Government of Lower Austria) * 25 RWA Raiffeisen Ware Austria AG 26 SCW Consult 27 Siemens AG Österreich 28 Stora Enso Wood Products GmbH 29 Thinkport Vienna 30 Tina Vienna GmbH * 31 TTS (Transport Trade Services) GmbH 32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	21	Quehenberger Logistics GmbH		
24 RU7 (Regional Government of Lower Austria) * 25 RWA Raiffeisen Ware Austria AG 26 SCW Consult 27 Siemens AG Österreich 28 Stora Enso Wood Products GmbH 29 Thinkport Vienna 30 Tina Vienna GmbH * 31 TTS (Transport Trade Services) GmbH 32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	22	Rail Cargo Austria AG		
25 RWA Raiffeisen Ware Austria AG 26 SCW Consult 27 Siemens AG Österreich 28 Stora Enso Wood Products GmbH 29 Thinkport Vienna 30 Tina Vienna GmbH * 31 TTS (Transport Trade Services) GmbH 32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	23	Rail Cargo Logistics, Krems		
26 SCW Consult 27 Siemens AG Österreich 28 Stora Enso Wood Products GmbH 29 Thinkport Vienna 30 Tina Vienna GmbH * 31 TTS (Transport Trade Services) GmbH 32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	24	RU7 (Regional Government of Lower Austria) *		
27 Siemens AG Österreich 28 Stora Enso Wood Products GmbH 29 Thinkport Vienna 30 Tina Vienna GmbH * 31 TTS (Transport Trade Services) GmbH 32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	25	RWA Raiffeisen Ware Austria AG		
28 Stora Enso Wood Products GmbH 29 Thinkport Vienna 30 Tina Vienna GmbH * 31 TTS (Transport Trade Services) GmbH 32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	26	SCW Consult		
29 Thinkport Vienna 30 Tina Vienna GmbH * 31 TTS (Transport Trade Services) GmbH 32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	27	Siemens AG Österreich		
30 Tina Vienna GmbH * 31 TTS (Transport Trade Services) GmbH 32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	28	Stora Enso Wood Products GmbH		
31 TTS (Transport Trade Services) GmbH 32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	29	Thinkport Vienna		
32 VFI GmbH 33 Via Donau Österreichische Wasserstraßen Gesellschaft mbH 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich	30	Tina Vienna GmbH *		
 Via Donau Österreichische Wasserstraßen Gesellschaft mbH Voith Hydro GmbH & Co KG WienCont GmbH Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG Wirtschaftskammer Niederösterreich 	31	TTS (Transport Trade Services) GmbH		
 34 Voith Hydro GmbH & Co KG 35 WienCont GmbH 36 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG 37 Wirtschaftskammer Niederösterreich 	32	VFI GmbH		
 WienCont GmbH Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG Wirtschaftskammer Niederösterreich 	33	Via Donau Österreichische Wasserstraßen Gesellschaft mbH		
 Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG Wirtschaftskammer Niederösterreich 	34	Voith Hydro GmbH & Co KG		
37 Wirtschaftskammer Niederösterreich	35	WienCont GmbH		
	36	Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG		
38 Zentralverband der Spediteure	37	Wirtschaftskammer Niederösterreich		
	38	Zentralverband der Spediteure		

^{*)} Project Partner or Associated Strategic Partners of the Project DBS Gateway Region



Results of the Regional Workshop:

Executive summary

The stakeholder involvement process for Lower Austria and Vienna was carried out by following a qualitative approach in four steps, namely pre-workshop interviews, interactive workshop, online survey and post-workshop interviews. There have been three common major topics as subjects of questions, discussions and questionnaire, fitting to the predefined structure of the regional partner reports, namely "Barriers and Challenges", "Potential of additional cargo" and "Measures to increase attractiveness of IWT on the Danube River".

All results, answers of open questions and statements concerning these three major topics were analysed, consolidated and restructured as shown in the current report.

Major challenges to be handled are (1) the condition of the waterway infrastructure itself, (2) the factor time and (3) the costs of transport and pricing policy relating to unpredictable additional fees. The **highest potential** for additional cargo as well as for modal shifting towards inland waterway in the focused region was recognised in the sectors high & heavy project cargo, renewables & biomass, recycling products, vehicles, mineral ressources, liquid energy raw materials and container transports.

In general the key results give a clear picture. First of all **waterway infrastructure** needs to be improved in order to provide consistent navigability on the entire Danube River. When this problem is solved additional cargo will automatically be shifted towards inland shipping. Secondly the European macro region Danube Region needs to be developed by working on the political, economic and social framework conditions. Successful economic development in Eastern Europe and Black Sea region countries will also generate additional cargo for the Danube. In the last step of this process **high quality logistics service providers** along the Danube River will face the new potential for cargo. They will do their business and increase logistic activities and transport on the inland waterway.

Transnational cooperation is an essential requirement for this development process of the Danube Black Sea Region in order to carry out **successful measures in the fields of organisation, operation innovation and political intervention**.

Subjects of cooperation projects do not necessarily have waterway transport as main purpose. Economic and logistic trend topics like urbanisation or digitalisation might offer a lot of opportunities for transnational cooperation between ports, cities, industries, logistic service providers, universities and other institutes and stakeholders of the system Inland Waterway Transport on the Danube River. Creative thinking for **innovative approaches** can offer opportunities even in an old economy driven sector like inland navigation.

- I. Transport logistics requirements and regional value added services in the Danube Black Sea Region
- i. Major challenges that companies face when transporting goods on the Danube River;

The stakeholder survey delivered the following listed major challenges for companies in terms of inland waterway transport on the Danube River.

Key Statements:

- Waterway infrastructure Bottlenecks, Water Level, environmental influences
- Critical factor "time"
- Available transport capacities
- Customs Barriers
- Organisation and planning of transport
- The price for transport is hardly calculable because of unpredictable additional fees.

The main logistic challenge is the reliability of the waterway infrastructure itself. In comparison with rail or road transport, in logistic planning this mode has to manage not only availability but also the usability of infrastructure.

All companies involved in Danube transport logistics have to deal with existing **bottlenecks of the waterway infrastructure**. Especially when the water level is lower than normal, those bottlenecks cause restrictions in navigability and may prohibit consistent transport at full capacity. In addition, companies face the risk of waterway blocks caused by environmental influences such as low water, high water or ice. Those conditions are not predictable for a whole business period. Backup solutions for logistics are to be developed in order to perform at competitive service levels and fulfil long-term contracts.

Time related aspects are essential from the logistics point of view. IWT involved companies face a lot of challenges in terms of time. First of all the speed of vessels on the Danube River is very low in comparison to trains or trucks. Lots of goods are very time sensitive. Therefore those goods are not suitable for waterway transports. For just in time delivery directly to the customer lead time of waterway is too long. In planning the entire transport chain lead time and costs of the main run on the waterway as well as transhipment and landside last mile delivery have to be calculated. Service levels and



price have to meet customers needs in order to be competitive as logistics service provider, a big challenge as well.

The fact that not all countries along the Danube River are members of the European Union causes customs handling in passing those countries. **Customs barriers** and administrative customs handling at Serbia and Ukraine cause usually another standing time and additional costs of transport.

Usually availability of **transport capacities** meets market demands. Yet seasonally -during harvest season - a lack of free capacities on the Danube River may occur and complicate logistics planning and disposition of transport. Those seasonal capacity constraints are relevant especially for typical Danube waterway transport goods such as agricultural commodities.

In order to optimise the entire logistic process it is necessary to provide relevant information of the system. Logistics managers are most often missing the transparency of relevant market information needed for **planning** of efficient processes. Therefore most often vessels are not optimally working at full capacity in both directions due to disparate import and export flows of goods. Besides there are no digital ICT-tools available for the system inland waterway for improvement of integrated network management and linking together all transport modes. Overall logistics involved stakeholders are missing a better cooperation between the transport modes IWT, rail and road in order to develop more efficient solutions for the customers.

ii. How low should be the price of the cargo transportation and handling on the Danube River in comparison to the road and rail, in order to choose this transport mode over the others?

Key Statements:

- In general total costs of the transport chain must be lower than costs of the benchmarks road or even rail transport.
- The price for transport is hardly calculable because of unplanable additional fees for bad and hardly predictable conditions of the waterway (low water, high water, ice).
- Competitive pricing always depends on the business case.

The process costs of additional planning and coordination efforts exceed many times the savings in transportation costs by using inland waterway transport.



Total costs of IWT are higher than costs of road or rail transports because of the expensive landside last mile delivery and the necessity of transshipment.

Part loads on the Danube River picked up by a barge during main legs are most often too expensive to be competitive with road transports because of the fixed costs per stop of a barge (calculated as costs per day).

Public funding of rail transports in several fields means economic intervention with negative effects on IWT. This kind of support makes competitiveness of IWT in these sectors difficult.

iii. How do you perceive the landlord ownership structure of the Danube ports in your country?

The ownership structure of the Austrian Danube ports is perceived as a very good basis for private investments. The Austrian Danube ports Linz, Enns, Krems and Vienna are all sort of public private partnership models (PPP). The only private run Danube port ist Felbermayr port in Linz, focused on high & heavy transshipment.

The PPP models ensure development of the ports by financing construction and maintenance of the port infrastructure by the public owned port operating companies. The port operators provide infrastructure such as quay and rail facilities for handling of goods and offer neutral access to three transport modes, IWT, rail and road.

Private industries and logistics service providers located directly in the port's industrial areas use the facilities and are directly responsible for economic success of the ports and its regional prosperity. Private companies appreciate this form of business partnership with the public sector because it allows to avoid private investment risks concerning infrastructural expenses. Thus industries settled in port business parks can focus on their core business.

iv. In what time frame do you expect some significant changes in the Danube logistics?

Regarding recent stagnating development process of inland waterway transports as well as future trends in transport and logistics, the participants of the survey could not perceive any trends indicating significant changes in the Danube logistics.

Significant changes in the Danube logistics depend on significant changes in other fields. The involved stakeholders were in complete agreement that significant changes of the entire framework conditions of the transport sector itself are necessary to trigger a step change in development of Danube logistics.

However some hypothetical scenarios causing positive effects on IWT on the Danube river were discussed:

- Substantial increase in taxation of road transports
- Technical capacity limits of Trans European Rail Networks will be exceeded
- unexpected quick development of Black Sea and Caspian Sea markets.

II. Potential of shifting transport modes

General Aspects Concerning Cargo Potential for the Inland Waterway Danube River

The highest potential for more cargo was regognized in existing bulk cargoto be shipped on the Danube River. Those goods are most suitable for Danube logistics. Its percentage related to all transport modes needs to be increased by raising quality of Danube logistics services as well as the know how of involved people.

Logistics service providers for inland waterway transports play a very important role in terms of raising attractiveness of this transport mode. As interface to industries and markets they provide know how and information concerning IWT solutions. Yet for business development activities they need modern infrastructure and high quality transshipment equipment in the Danube ports for most efficient cargo handling. The better those preconditions the higher the quality of performance and the higher the potential for new innovative services to increase cargo on the Danube river.

In order to identify new markets for Danube cargo once you have to define what you are looking for. "Market" can be described geographically as well as economically by focusing on certain branches, goods or sectors.

China's and Europe's vision of the New Silk Road means a great chance for the Danube Black Sea Gateway Region. When those new markets surrounding Black Sea and Caspian Sea will be linked with China and Europe Danube River will become a more important player as transport mode. Besides a lot of so called hidden champions out of these regions can appear as great business opportunities for Austrian and European companies.

To support all those development oriented visions transnational cooperation needs to be strengthened. An increase in transnational business cooperation will also increase the

position of the Danube Region within regional policy of the European Union and furtheron generate additional support from Brussels.

By considering business opportunities for cargo transport on the Danube River another aspect was mentioned namely the success of cruies liners on the Danube River. This is of course a totally different sector but analysing its specific factors of success might open the mind also for innovative logistics solutions.

Development of innovative solutions could be another approach for raising cargo potential. The following examples were carried out at the regional workshop:

- Barge used as mobile storage facilities
- Value added services in ports or even on barges (Finishing)
- High speed shuttle service using smaller sized vessels (e.g. Twin City Liner for goods)
- Innovative solutions for short-range delivery
- City Logistics as chance for development of additional port services in metropolitan areas (e.g. Hafen Wien)
- Push for digitalization and automatization, e.g. dynamic pricing

v. Do you expect the cargo flows on the Danube to increase in the next 10-20 years?

The overall estimation is that cargo flows will increase slightly but steadily within the next 10 to 20 years. Stakeholders expect an increase in the number of shipments by decreasing average tonnage per shipment.

Referring to official forecasts by the European Union freight traffic will increase by approximately 30% until 2030. All transport modes will share this growth. Therefore an increase in absolut numbers of inland waterway transport on the Danube river within that period might be realistic too.

Relative growth of waterway transport referring to road and rail transports will decline if shifting cargo from landside transport modes will not be successful in future times. To develop measures supporting shifting cargo from land to water transport mode is one of the main aims of the current project initiative.

However an increase in cargo flows will depend on certain economic conditions:

• Economic growth in the focused Danube Black Sea Region.

- Increase in demand for more waterway transport due to additional productioncapacity of existing customers of IWT.
- Improvement of logistics and transport infrastructure.
- Increase in global flows of goods, especially between Asia and Europe.
- Development of the New Silk Road in order to improve accessibility of new markets.
- Technological innovation concerning transport planning as well as handling of goods will allow innovative logistics services and strategies on he Danube River such as smaller volumes per shipment, intercorporate cooperations in terms of grouping of transports or assemble to order strategies.
- Improvement of information and communication tools for the logistics players will provide new opportunities for additional transports such as for example part load for short-range transports on the Danube River.

vi. If yes, what type of cargo you expect to increase and how much (in percent)?

- High & Heavy project cargo
 - o Industrial engineering facilities
 - Onshore wind energy turbines
 - Power transformers
 - Building machines and engines
- Renewables; Biomass
 - Biomass
 - o Agricultural Products (rape, sunflower seeds, wheat, maize, soy bean)
 - Forestry Products (round wood, pellets)
- Recycling Products
 - Scrap Metal
 - o Plastics
 - o Paper
- Vehicles
 - Cars
 - Vehicle Equipment
- Mineral Ressources
 - o Magnesite, bentonite
 - o Iron ore

- o Salt
- Cement, gravel, crushed rock, sand (for construction industry)
- Liquid energy raw materials
 - o Crude oil
 - Biodiesel
 - o Bioethanol
 - o LNG
 - Diesel and gas fuel
- Containerised transport solutions
 - Break bulk cargo
 - o Tank and Flexi Tank Container

vii. What origin and destination of the increased cargo flows do you foresee?

The involved stakeholders gave a broad overview of market trends and opportunities for future cargo flows related to the Danube Region and IWT on the Danube River. In general both directions on the Danube River are relevant for additional waterway cargo.

The stakeholders identified Turkey and the Caspian Region as very high potential markets for the Danube Region. From the logistic point of view the Caspian Region is seen as the eastern borderline for transport connections via Black Sea and Danube River towards Europe. The Danube Region as well as the Black Sea Region face great opportunities by current political and economic development activities around The New Silk Road.

As major transport relation Austrian stakeholders recognized the route from Eastern Europe via Austria to the Netherlands in order to connect industrial areas of the CEE countries with industrial areas of Germany and Benelux.

Regarding the special topic "container", logistics experts do not recognise realistic chances of Black Sea ports to succeed in the competition with North Sea and Adriatic Sea ports concerning the big container flows from Asia. Thus container transport from Asia via Black Sea might not be a high potential for IWT on the Danube River in the near future. Nevertheless container transport on the Danube River could work. The market demand for container transport must be found in the upcoming Black Sea Region itself.

The following chart displays a well defined structure of the results and identified market potential for IWT on the Danube River.

Direction	Region	Country	Partner	Subject
EAST	Black Sea Caspian Sea Caucasus Danube	Turkey Russia Georgia Azerbaijan Romania Bulgaria	Black Sea Ports: Constanta Galati All Danube Ports	Development activities concerning New Silk Road; Container Constanta-Rotterdam; Tank and flexi tank containers from Constanta; Black Sea Region as important market for raw materials; Turkey supplier of mineral ressources such as magnesite and bentonite; Scrap metal from Central Europe to Turkey; Industrial engineering facilities for hydro and wind energy power plants for emerging markets of
South	Balkan Adriatic Aegean Middle East North Africa	Croatia	Koper Trieste	Easter Europe; Development of croatian Save River for better navigability will improve connection between croatian hinterland and Danube Region;
NORTH	North Sea Baltic Sea Rhine-Main Region Bavaria	Germany Benelux	ARA Ports Hamburg Bavarian Danube ports	The big ports of the North Sea will remain the most important gateways for Central Europe and the Danube Region concerning Asian import (and export) flows;



III. Barriers for the business, forecasts and recommendations

viii. Measures necessary to increase the attractiveness of the IWT in the DBS region;

Strategic Area	ORGANISATION
Fields of Action	Activities and Measures
Information	Database (open data) – condition of the waterway
	Information about the use of sounding vessels and coordination of waterway
	maintenance work (e.g. digging)
	Involvement of all relevant service providers
	Tracking
	Information about water level for exact forecasts
	DORIS-App for the whole of the Danube river basin
	Upgrading of the Danube Logistics Portal www.danube-logistics.info
Communication &	Awareness-raising measures especially among manufacturing companies (cluster
Public Relation	activities) and logistics service providers
	Intensify personal contacts
	Reduction of language barriers
	The image of the inland waterway transport must be enhanced and positive aspects
	must be given an understanding to the public.
	Awareness-raising among policy-makers; mind shift in general regarding the
	importance of sustainable transport; to benefit decision-making processes for
	sustainable modes of transport; inland waterway transport is to be considered as
	part of the transport chain and not as a stand-alone solution
	Promotion items: inland waterway transport, markets and possible destinations
	Awareness of inland waterway transport withinpolitics and business; Defusing
	criteria of environmental protection
	Success stories / collect best practice examples and prepare as easy-to-use
	information
	Presentations and events
Cooperation &	Infrastructure operators should coordinate better during maintenance operations
Networking &	etc.
Management	Integration and networking with emergency services
	Logistics service providers should be involved earlier into the planning and
	development process of industries, for example when planning the location of a
	production facility or when developing new markets (participate at business
	delegations). Unfortunately, currently transport solutions are considered only
	after the construction of the production facility.

	More intensive cooperation of the emergency services is necessary, in order to be	
	able to mass the forces in the case of accidents with a possible considerable	
	environmental risk.	
	Decisions on measures on and along the Danube must be made on the whole	
	length by one single responsible authority. The financing must come from a	
	common pot of all Danube countries.	
Qualification	Attracting of the job profile "captain" and other relevant jobs	
	Standardisation of training and qualification at European level	
	EU patent of shipping	
	Great need for qualification / know-how on the organization of waterway	
	transport	
	Inland waterway transport is not integrated into the qualification programs of	
	freight forwarders	
	Increase know-how and consulting-competence of involved stakeholders on	
	management level required(port operators,) -> practice-oriented qualification	
	programs at management level	

Strategic Area	INNOVATION
Fields of Action	Activities and Measures
Digitalisation	Configuration of a digital freight and transport exchange platform
	Intermodal transport and traffic information systems (interface waterway – ports – road – rail)
	Install an integrated communication system for all 3 modes of transport in the Danube Region
Urbanisation	Autonomous city logistic vessel inclusive autonomous loading and unloading
	stations
	Modular loading units for combined transport solutions (vessel + city logistic)
	High-performance road (land) for alternative vehicles (for example also
	autonomously) between the port as a logistics hub and the city center for last mile distribution
Transport Technology	New powertrain technologies for vessels
	Innovation in shipbuilding of vessels through new "loading infrastructure" (more efficient in loading and unloading)
	Construction of a new type of vessel which combines inland and coastal shipping
	New vessels must be faster, more efficient, more modern and also more relevant
	for small consignments
	Technology Innovations in terminal operations (e.g. use of robots for handling of wagons)

Strategic Area	OPERATION	
Fields of Action	Activities and Measures	
Investment	Investments in special transshipment technologies in the hubs are considered to be not relevant since the ports are already very well equipped and to be invested in expansion as required.	
	There are no suitable possibilities of transhipment for heavy goods (> 100 tonnes per unit).	
	Measures to transport at low water – an issue especially in the east of Europe	
	maintenance measures to keep infrastructure in good condition constantly	
	Well coordinated investments in infrastructure	
	Removing of obstructions restricting the driving range and driving depth	
Logistics and	The installation of a container service was recommended, under the condition:	
Transport Planning	markets for it must correspond; This already existed between Constanta and	
	Budapest, but was discontinued (for business reasons); a container line service	
	from Rotterdam to Constanta would be of interest	
	Development of the regional logistics hub function of the ports	
	To comply with the requirements for container transport services	
	Integration of inland waterway transport into the logistics chain wherever it is useful	
	develop a seaport with gateway function at Black Sea like the port of Rotterdam	
	for the Rhine at the North Sea	
	Development of new business cases (logistics); e.g. paired transport solutions for metal scrap cargo, business case to use function as hinterland hub	
	Development of the logistics hubs (port locations) through cooperation and best	
	possible combination of all modes of transport and organization of the last mile at	
	the location (e.g. rail transport solutions into the terminal)	

Strategic Area	PUBLIC
Fields of Action	Activities and Measures
Political & Legal	Ratification of the CMNI by Austria; Platform for emergency services of the
	Danube countries
	Clearly define the barriers together with the European Commission and the ICPDR
	and address them according to the Joint Statement
Funding	Financial supports and subsidies of road / rail / ship must be skipped in order to
	ensure competitiveness between all modes
	Co2 savings grant for the vessel transport
	Financial supports for the vessel transport

Business Areas & Location Policy	Adapt spatial planning with regard to industrial and commercial enterprises to be able to influence settlement policy of production plants for bulk goods on the Danube
	In the case of company settlements, a selected person out of the logistics sector should always make a short report / study – This can be in cooperation with a regional business agency like ecoplus in Lower Austria, or similar. It is thus possible to ensure that production sites, etc., which work with bulk goods, are not seated in settlement 20 or 30 km away from the Danube. That means, act where the life cycle of a company begins – namely at planning the business location.
	Improve coordination of regional business settlement activities

ix. What are main reasons for the underdeveloped IWT on the Danube River;

The collected arguments against IWT were grouped after the same criteria as above listed measures in order to allow later on a link betwenn problems identified and ideas for activities and measures to increase traffic on the Danube River.

Strategic Area	ORGANISATION
Fields of Action	Reasons for underdeveloped IWT on Danube River
Information	Lack of information or missing information and communication tools
Communication &	Missing awareness of opportunities by using waterway transport within
PR	policymakers - There is a lack of know how within the decision-makers
	In general lack of awareness for the inland waterway
Cooperation &	Discussion: modal shift to the inland waterway is often prevented or not
Networking &	supported by influential industry representatives and / or service providers for
Management	reasons of profitability (own turnover loss). These barriers block successful modal
	shift of transport (sometimes even more significant than the natural or logistical
	barriers of the Danube waterway).
Qualification	Inland navigation is not subject of any qualification programs in Austria's schools
	and universities

Strategic Area	INNOVATION
Fields of Action	Reasons for underdeveloped IWT on Danube River
Digitalisation	-



Urbanisation	-
Transport	Technical conditions of fleet (old vessels) do not allow efficient containerised
Technology	transport of products and goods

Strategic Area	OPERATION
Fields of Action	Reasons for underdeveloped IWT on Danube River
Investment	The biggest problem is the classic "bottlenecks" of the waterway infrastructure, which often prevent continuous traffic with full load capacity. Too low water level in autumn and winter cause problems for navigation. In general there is a lack of investments and maintenance of waterway infrastructure. "Rail hinterland connection" was also considered to be an improveable or
	expandable option.
Logistics and Transport Planning	The inland waterway transport does not integrate landside transport carriers into the transport chain
	The inland waterway lacks regular services such as container and/or RoRo lines (like for example regular block train services)
	The logistics service providers do not consider inland waterway as optional
	transport mode in planning transport chains
	Lack of awareness of inland waterway transport as part of the logistics chain
	Environment protection and environment related transport-KPIs are not relevant
	for the selection of transport modes yet.
	No consideration of environmental criteria in transport planning
	no demand for waterway transport
	Road transport is more flexible and more cost-effective
	Administrative barriers, especially customs barriers in third countries (Serbia, Ukraine, Black Sea) cause waiting times at the borders
	Okraine, black Sea) cause waiting times at the borders
	Inland waterway transport is not suitable for many shippers/logistics providers, because the shipped good is not bulk cargo
	Inland waterway transport is not suitable for many shippers/logistics providers,
	because these deal in shipment of very small loads (less than container)
	Bosporus is a bottleneck for big container vessels and therefore a disadvantage for
	Black Sea ports in competing for Asian transport flows
	Competition between the northern Adriatic Sea and the Black Sea
	Transit times (transport speed)
	Availability of vessels
	Predictability of costs and time

Strategic Area	PUBLIC
Fields of Action	Reasons for underdeveloped IWT on Danube River
Political & Legal	Missing legislation supporting eco-friendly transport solutions
	Inconsistent liability (Austria has not ratified the Budapest Convention CMNI as
	the only Danube country)
Funding	Discrimination concerning funding programmes for specific rail transport
	solutions
	Inland waterway is not subject of national funding programmes
	There is only an insufficient amount of public funds for the waterways available
Business Areas &	Lack of zones of business areas in the surroundings of the port
Location Policy	Long lead time of the realization of important transport infrastructure projects (e.g.
	bridges) for a better land-side port connection (political decision making process!)

IV Annex

Results of the online survey

Minutes and results of the regional workshop on 28 June 2017 in Vienna