UPGRADING OF
INLAND WATERWAYS AND SEA PORTS

- PROJECT RESULTS -
The growing importance of the global market and the Southern Mediterranean economies, as well as the progressive eastward shift of the manufacturing production, whose business model exploits the full potential of waterborne transport, are some of the drivers that have led to a growing awareness of the crucial role ports and their hinterland networks can play in creating jobs and making the European continent more competitive. European Core Network Corridors with origins and destinations in ports, remind us that “ports are engines for growth”. Rebalancing the feeding of the European markets towards the Mediterranean southern ports, as a multiport gateway, can guarantee a more sustainable accessibility to and from the Central European markets. In particular, the enhancement of the connections with the Danube regions and the development of the Baltic-Adriatic axis will allow to increase integration and sustainability of the entire system.

In Europe, waterborne transport offers economical and environmentally friendly freight transport but this potential has not been sufficiently exploited yet. INWAPO project has supported the activation of this unexploited potential in the Central Europe area through investments preparation of ports’ infrastructures and new services, contributing to shape an alternative to full road transport. The project has meant to help improving the efficiency of river and sea ports operations and the development of tri-modal links with their hinterland infrastructure network as well as with other ports.

All significant project results have been strategically assessed in the INWAPO Action Plan, highlighting concrete opportunities for joint cooperation on future common actions. Therefore, I am pleased to introduce this publication, that capitalizes the contribution every single Partner of the Consortium has brought to the research, balancing a public and a business-oriented approach at transnational level.

PAOLO COSTA
President of Venice Port Authority
A GATEWAY TO THE HEART OF EUROPE

INWAPO increases the attractiveness of waterborne transport by:
- improving the efficiency of the river and sea ports
- fostering freight traffic on waterways
- strengthening the integration of port’s infrastructures in the logistics chain with connections form ports to the hinterland

INWAPO AT A GLANCE
- 1 of the 18 CENTRAL EUROPE Programme projects dealing with accessibility and multimodal logistics
- 1 of the 7 CENTRAL EUROPE strategic projects
- 7 countries involved
- 13 project partners
- ERDF FUNDING € 3.047.282,00
- 39 months
  Start date: October 2011 - End date: December 2014

FLASH DATA

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Ports in seven countries cooperating on sustainable alternatives to road transport

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Market studies focusing on new services and investments presented to companies and port communities

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Infrastructure investments supported in Vienna, Budapest and Bratislava
# PROTAGONISTS: 3 WATERWAY SYSTEMS

![Image of a port](image1)

![Image of a port](image2)

![Image of a port](image3)

## KEY PLAYERS: PORTS

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<th>NORTH ADRIATIC PORTS (IT - SI)</th>
<th>DANUBE PORTS (AT - HU - SK)</th>
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<td>POLISH PORTS (WARSZAW, PLOCK, WLOCLAWECK...)</td>
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## MAIN GOALS

- establishing the ports as fully equipped with tri-modal transport hubs
- shifting additional cargo into waterways
- connecting river and sea ports with new multimodal services
The following studies have been implemented for the investigation and estimation of the partners’ ports potential waterborne transport, analyzing the transport volume generated by the ports hinterlands and the ports infrastructures, as to define the demand for new freight transport services.

1. IRON AND STEEL LOGISTICS: central and eastern Europe represents a considerable potential market and the enhancement of rail services and related logistics requirement will allow to fulfill this opportunity

2. AGROFOOD/FEED LOGISTICS: potential interesting sector to expand the foreign hinterland is soya for use in animal feed industries

3. Refined OIL AND ENERGY LOGISTICS: incoming products already refined and processed are modifying the nature of port traffic in this sector, leading towards new investments in “green” technologies

4. CHEMICAL LOGISTICS: assessment of logistics requirements needed and enhancement of port capacities in relation to different commodities (solid, liquid and gaseous)
PORT OF VIENNA
In-depth survey about the inland waterway transport potential in the ports’ hinterland. The major goal is to assess quantitative and qualitative data about the companies in the port hinterland and their transport logistics systems.

CZECH IWW SYSTEM
Analysis of the potential of the inland waterway connecting the Black Sea through the Czech Republic with the North and Baltic Seas - the Danube-Odra-Elbe canal.

USTI REGION
Analysis of freight flows in the hinterland area of four Czech Lower Elbe ports - Mělník, Lovosice, Ústí nad Labem and Děčín based on information gathered from the interviewed shipping companies, in order to estimate the potential freight volume to be shifted on waterways, primarily from road.

PORT OF BUDAPEST
Analysis elaborated on questionnaires conducted with manufacturing/shipping companies having relevant freight transport flows originated from, or destined to, the hinterland area of Csepel Freeport Budapest.

PORT OF TRIESTE
Overview of the existing trade flows of agri-food products, the transport modalities, the main overseas O/D markets, the specialized terminals in the port. Assessment of the potentials generated by the hinterland with a focus on the inland waterways.

VISTULA RIVER
Analysis of the potential generated by the ports situated on the waterway of the Vistula River in the section between Gdansk and Warsaw (the Vistula in the section from the Vistula estuary to the 507th km - Warsaw, southern part of the city- between the sea ports in Gdańsk and Elbląg and Warsaw Siekierkowski Port).

PORTS OF BRATISLAVA AND KOMARNO
Port infrastructure conditions were taken into account in this respect and analysed. Available data on domestic and international unaccompanied container transport and performance data of selected intermodal terminals in Slovakia were examined too.

PORT OF KOPER
The possibilities of an optimal use of the existing infrastructure, requirements of additional infrastructure needs based on the freight flow perspectives for different cargo groups according market estimations.

INFRASTRUCTURAL NODES IN THE NORTH-EAST OF ITALY:
Analysis of traffic flows in 8 infrastructural nodes, in particular: Trento, Verona, Padua, Rovigo, Cervignano Freight Villages; Port of Venice, Port of Trieste; Intermodal node Consorzio CIPAF (Gemona del Friuli - Udine)

Complete market studies are available on request (apv.progettocomunitari@port.venice.it)
## Feasibility and Activation of New Links

**Market Review Analyses Involved:**
- Austrian market
- Czech Republic area
- Oder and Vistula rivers
- Macroregional analysis North East Italy
- Budapest - Csepel Freeport
- Bratislava, Nitra, Trnava Regions
- Port of Koper

## Feasibility Studies of New Waterborne and Intermodal Links

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| Feasibility of the Danube-Oder-Elbe Canal Infrastructural Project | Two transnational consultation meetings with involved countries |

## Assessment from the Operators in the Field with B2B Meetings

Complete studies are available on request (apv.progettocomunitari@port.venice.it)
INWAPO SUPPORT TO INVESTMENTS PREPARATION FOR TRI-MODALITY AND NEW SERVICES

PORT OF VENICE
- Optimization and enhancement of the broadband infrastructure
- Improvement of the port railway network - Porto Marghera
- Development of ICT system for port rail management

FREEPORT OF BUDAPEST
- New access road to the port reducing waiting time, traffic and pollution caused by trucks
- Dock suitable for loading and unloading heavy goods

POLISH PORTS
- Methods and estimated costs for the modernization and revitalization of the Vistula river

PORTS OF BRATISLAVA, KOMARNO, STUROVO
- Development of ICT applications and functionality enhancement
- Feasibility study on construction of the new car terminal in the Port of Bratislava

PORT OF KOPER
- Dredging operations in port basins and accessing channel
- Extension of port piers and berthing facilities
- Additional railway tracks and connecting infrastructure inside the port
- Construction of storage areas in the port immediate hinterland (priority on containers)

FOCUS ON COMMON PRIORITIES AND FUTURE ACTIONS PER AREA:

NAPA PROJECT PARTNERS
DANUBE WATERWAY SYSTEM
CZECH WATERWAY SYSTEM
POLISH WATERWAYS - INLAND AND SEA PORTS
**INWAPO TANGIBLE SUPPORT TO THE COMPETITIVENESS OF PORTS**

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<td><strong>PORT OF VIENNA</strong></td>
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<tr>
<td>· Cost/benefit analysis for the optimization and enhancement of the broadband infrastructure in the port of Venice</td>
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<td>· Analysis of the residual external rail capacity, investigating existing and potential bottlenecks in the short-middle term</td>
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<td><strong>FREEPORT OF BUDAPEST</strong></td>
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<td>Test of a mobile waste and bilge water collector equipment</td>
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<td>· Electronic arrival/departure reporting system for vessels</td>
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<td>· Introduction of the possibility for a service to display position and estimated time of arrival for vessels heading towards the port</td>
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<td><strong>PORTS OF BRATISLAVA AND KOMARNO</strong></td>
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<td>· Implementation of new Client Interface Module to improve communication with clients from the whole Danube Region</td>
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<td>· Study on software and hardware solutions to support the process of transshipment of cargo from ship to shore and vice versa</td>
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GREENING THE LOGISTICS CHAIN: ALTERNATIVES TO ROAD TRANSPORT TAKE SHAPE IN CENTRAL EUROPE

ACTIONS CARRIED OUT:

ENVIRONMENTAL ANALYSIS WITH FOCUS ON THE POTENTIAL IMPACT OF INCREASED TRANSPORT VOLUMES ON THE RIVER AND MARITIME ENVIRONMENT:
- environmental conjunctures of INWAPO ports and connected waterways: climate change, air pollution, noise impact, land use and biodiversity, and water quality
- proposed measures to mitigate the impacts of the development of waterborne transport
- environmental impacts that are avoided following the replacement of waterborne transport

DEFINITION OF ONE SET OF ENVIRONMENTAL INDICATORS FOR SUSTAINABILITY BENCHMARK:
- identify the needs and potentials for environmental developments
- following, monitoring, evaluating the effect of an intervention

ENVIRONMENTAL ASSESSMENTS INTEGRATED IN PARTNER PORTS’ INVESTMENT PLANS:
- impact of planned investments on the environmental indicators
- main environmental assessments by investment categories
- elaboration of recommendations to improve the environmental impact of planned investments

POLICIES
INWAPO WILL LEAD PORTS AUTHORITIES, NATIONAL, REGIONAL AND LOCAL INSTITUTIONS TO IDENTIFY BEST POLICIES PROMOTING MORE SUSTAINABLE AND COMPETITIVE WAYS OF TRANSPORT
PORTS INVESTMENTS

PORT OF VIENNA

- Purchase of a forklift for the improvement of handling capacity
- Handling Terminal of the Port of Freudenau
- INWAPO budget: euro 9,000
- Operational from July 2013

PORT OF BUDAPEST

- Two cargo ship quays provision of water and electricity: vessels have direct access to the infrastructure
- INWAPO budget: euro 51,000
- Operational from July 2013
PORTS INVESTMENTS
PORT OF BRATISLAVA

- RENOVATION OF A CRANE:
  it allows the port to attract and handle goods that haven’t been previously transported by river

- Operational from November 2013
- INWAPO budget: euro 174,000

< BEFORE

AFTER >

THIS INVESTMENT CONTRIBUTES CONCRETELY TO MODAL SHIFT OF GOODS FROM ROAD TO RIVER TRANSPORT, IN PARTICULAR AGRICULTURAL COMMODITIES:

- 2011/2013: transshipment capacity of the previous crane = 5575,67 tons
- 2014: transshipment capacity of the new crane = 6280,64 tons

TRANSNATIONAL ADDED VALUE: 65%
TRANSSHIPPED CARGO BY CUSTOMERS FROM CENTRAL EUROPE: 59,68%
EXCLUDING SLOVAKIA
CUSTOMERS FROM 7 COUNTRIES ARE BENEFITTING FROM THE RECONSTRUCTED CRANE FOR TRANSSHIPMENT OF THEIR AGRICULTURAL CARGO
www.inwapo-project.eu

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