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DaHar – Danube Inland Harbour Development
Local Action Plan- Port of Vukovar

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Abbreviations

DaHar	Danube Inland Harbour Development
IWT	Inland Waterway Transport
PP	Project Partner
LAP	Local Action Plan
CU	Coordination Unit
WG	Working Group
WP	Working Plan
EC	European Commission
EUSDR	European Union Strategy for Danube Region
MMAT	Ministry of Maritime Affairs, Transport and Development

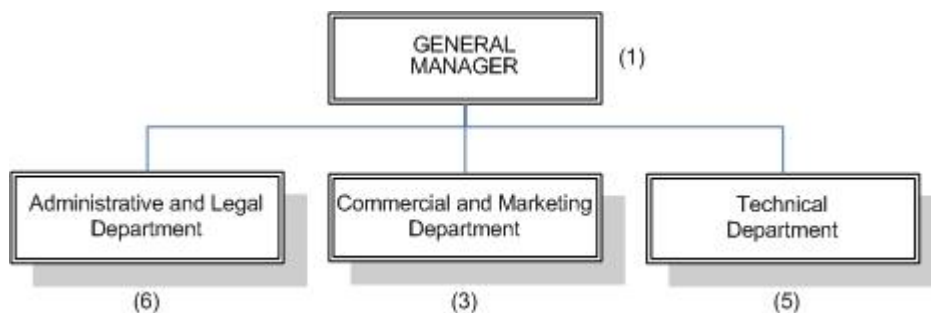


1 Background

The aim of the Local Action Plan (LAP) of Vukovar port is to define concrete measures and actions in realizing the strategic objectives defined in the Master Plan of Dahar project. Strategic goals must be consistent with the legal framework of the Republic of Croatia, with guidelines of the Strategy for Regional Development, Transport Development Strategy of the Republic of Croatia, the Development Strategy of Vukovarsko-Srijemska County and the Overall Development Program of the City of Vukovar. Also, measures should be coordinated with the development plan of the Ministry of Maritime Affairs, Transport and Development in the inland waterways sector which include development measures and plans of the Port Authority for the Port of Vukovar. Furthermore, LAP for Vukovar port is compliant with policy framework and methodology defined in the *Methodological guideline for Local Action Plan*, and strategic measures of the Master Plan for the individual columns (TP1, TP3 and TP4).

2 LAP Implementation Structure

2.1 Port of Vukovar - organizational structure of port authority



2.2 Participants involved (involved stakeholders):

Port Authority Vukovar
City of Vukovar
Ministry of Maritime Affairs, Transport and Infrastructure (MMATI)
Luka Vukovar d.o.o.
Vukovar Captaincy

2.3 LAP Implementation Unit:

Božana Matoš - Manager of Port Authority Vukovar
Tomislav Mihaljević - Manager of Luka Vukovar d.o.o.
Ivan Barović - Captain in Vukovar Captaincy
MMATI - Janko Brnardić, Head of Sector



3 Outlines for Local Action Plan development

Masterplan 1 - Logistical infrastructure of ports, port operation models

3.1 Objective – Modernize Port of Vukovar infrastructure

- 3.1.1 Proposed actions:** Implementation of actions within New Port East project – construction of new quay wall, construction of berthing equipment, construction of additional storage facilities
- 3.1.2 Potential impact –** increased open and closed storage capacity, increased length of quay wall, accommodation of all standard inland vessels, safe docking of the vessels, simultaneous two vessels transshipment at one berth
- 3.1.3 Estimated terms (start and final):** 08/2013 – 08/2017
- 3.1.4 Potential/requested partners/support providers:** Port Authority Vukovar, Luka Vukovar d.o.o., Ministry of Transport in Croatia, City of Vukovar
- 3.1.5 Fiscal/regulatory/other needed measures:** Provide state co-financing for the project, Harmonize Inland Navigation and Ports Act with new Concessions Act in Croatia.

3.2 Objective – Increase quality of port services

- 3.2.1 Proposed actions:** Implementation of actions within New Port East project – improve port surfacing, establish new storage facilities for bulk cargo, obtain new equipment for handling bulk cargo
- 3.2.2 Potential impact –** higher quality of port service, reduced loading/unloading times, possibility to handle different types of bulk cargo, handling cargo in ecologically friendly manner
- 3.2.3 Estimated terms (start and final):** 08/2013 – 08/2017
- 3.2.4 Potential/requested partners/support providers:** Port Authority Vukovar, Luka Vukovar d.o.o., Ministry of Transport in Croatia, City of Vukovar
- 3.2.5 Fiscal/regulatory/other needed measures:** Provide state co-financing for the project.

3.3 Objective – Further develop Landlord model in Port of Vukovar

- 3.3.1 Proposed actions –** Privatization of state owned port operator
- 3.3.1.1 Potential impact –** modernization of port equipment and processes, increasing port transshipment volumes, attracting new businesses to port
- 3.3.1.2 Estimated terms (start and final):** 01/2014 – 01/2015
- 3.3.1.3 Potential/requested partners/support providers:** Port Authority Vukovar, Luka Vukovar d.o.o., Ministry of Transport in Croatia, Ministry of Finance in Croatia
- 3.3.1.4 Fiscal/regulatory/other needed measures:** Extrication of land property from operator and registering it as state owned.



Masterplan 3 - Introduction and development of container and Ro-Ro services on the Danube

3.4 Objective – Prepare multifunctional infrastructure for possible container and Ro-Ro services in Port of Vukovar

3.4.1 Proposed actions – Construct multipurpose terminal within New Port East project

3.4.1.1 Potential impact – the terminal will be used for bulk cargo transshipment and ready to be used for container transshipment if necessary.

3.4.1.2 Estimated terms (start and final) – 08/2013 – 08/2017

3.4.1.3 Potential/requested partners/support providers - Port Authority Vukovar, Luka Vukovar d.o.o., Ministry of Transport in Croatia, City of Vukovar

3.4.1.4 Fiscal/regulatory/other needed measures - Provide state co-financing for the project.

Masterplan 4 - RIS related cargo transport management

3.5 Objective - Implementation of RIS services in Port of Vukovar

3.5.1 Proposed actions - Upgrading port management software application (ePort) with RIS functionalities (ERI, Hull Database, Calamity Abatement, DGW, RIS Index)

3.5.1.1 Potential impact - reducing paperwork in port procedures, faster port processes, more reliable and real time data (ship, cargo, voyage, crew), connecting with other RIS systems, increased safety of navigation and transshipment

3.5.1.2 Estimated terms (start and final) - 06/2014 - 12/2016

3.5.1.3 Potential/requested partners/support providers - Ministry of Transport in Croatia, Agency for Inland Waterways, CRUP, port operators, Customs, Police

3.5.1.4 Fiscal/regulatory/other needed measures - Europe wide solution of privacy of data problem, providing state financing for Port authority Vukovar.



4 Annexes

Masterplan 1 - Logistical infrastructure of ports, port operation models and Masterplan 3 - Introduction and development of container and Ro-Ro services on the Danube

Objectives 3.1, 3.2, 3.3 and 3.4

Context of the actions

The objectives – Increase port operating area and Increase quality of port services will be achieved through actions within the New Port East project.

This project is being put forward by the Port Authority in Vukovar as the beneficiary, under the Transport Operational Program, Priority 2 - upgrading Croatia's inland waterway system. The indicative list of major projects in the Inland Waterway sector includes the following projects:

- Rehabilitation and Improvement of the Sava River Waterway
- Reconstruction of the Port of Vukovar – New Port East

Therefore, the Project of reconstruction of the Port of Vukovar – New Port East is fully consistent with the aims and criteria of the program and therefore with national, regional and local development plans.

Specific actions

The New Port East project in Vukovar encompasses the construction of infrastructural port facilities, quay wall, road and rail as well as communal infrastructure, port loading and unloading equipment for three new terminals:

- bulk cargo terminal
- multipurpose terminal
- general and palletized cargo terminal

Port quality and port service provision/requirements

The port quality attributes indicate the quality of the port services and should be evaluated by taking the whole transport supply chain into account. Often ports and transshipment sites are critical parts of the overall transport chain, because transshipment generates additional transport costs and is time-consuming.

The quality of the transport sector and transport services in general can be expressed through the following indicators: speed of movement, service schedule, reliability of service, regularity of service, accidental risk, availability of service, flexibility or ability to reach the particular point, transport productivity, etc.

In addition, some ecological aspects of the transport system should be taken into account. Consequently, the inland navigation sector is one of the most ecologically friendly transport modes with a low risk of accidents and with a high ratio of transport efficiency if external costs are taken into account.

The reliability of service is one of the crucial quality indicators in the inland navigation and inland port sector. It shows at what period of time the waterway or the port is available for services. The



main problem in inland waterway ports is typically fluctuations of the water level along the fairway.

A port has additional, but similar operating options that are used for an assessment of the quality of services. These operating options are port loading and unloading service options and rates, the waiting time of vessels for berthing, the total time a vessel has to spend at the port, the dwell time of stored cargo and the total waiting time of cargo at the port.

Involved Stakeholders

The main stakeholders can be divided into two categories. The first category consists of public entities and the other category of commercial companies and industries in general representing the port customers:

Public institutions:

- Ministry of the Maritime Affairs, Transport and Infrastructure
- Harbormaster Office Vukovar (Captaincy)
- Port Authority Vukovar
- Municipality of Vukovar (City of Vukovar).

Private companies:

- Port of Vukovar Ltd. (presently still state-owned)
- Carriers, shippers and logistic operators
- Industry, clients

Impact

The proposed project will have a positive impact on the port in Vukovar and for the clients using the port. Given that the service provided by the port in Vukovar increases as well as does the port capacity, the port will promote shifting cargo traffic from roads to waterways. This has a positive and significant effect on air pollution, climate change, noise, accidents, congestion and the wear of the infrastructure in Europe.

Time Frame

The activities started in 2013 (08/2013) and finish of implementation is estimated for mid 2017.

Expected Outcomes

The future state of the Vukovar port involves reorganization of the port infrastructure, which means:

- Reconstruction and upgrading of the part of the operative bank at a the length of about 450 m by means of construction of a ‘vertical bank’ to enable access to coastal cranes through two ships docked in parallel and organization of adequate storage areas beyond the construction zone.
- Reconstruction, involving reorganization of other port infrastructure, so that the basic activity of cargo transshipment in the Vukovar Port may take place without interruptions during construction of the port basin and during its subsequent operation

The spatial extent of the proposed project consists of 27.7 ha of land area and 39.3 ha of the Danube water area.



Quality Indicators

Quality indicators	Explanation
Average vessel turn-round time	Total time at port/number of vessels
Average tonnage per vessel day	Q/vessel/day
Average waiting time	Time in waiting queue
Waiting rate (congestion factor) - k_w	Waiting time/service time - k_w
Berth occupancy factor - k_o	Portion of time that berth is occupied by a vessel
Berth utilization rate	Time of working/total time at berth
Productivity per gang hour/productivity per shift	Q/gang/hour, Q/shift
Dwell time	Total time of cargo staying in the port
Berth productivity	Q/berth
Throughput per linear meter	Q/linear meter of key wall

Stakeholder analysis table

Stakeholder and characteristics	Interests and expectations	Capacity and motivation	Actions to address stakeholder interests
Ministry of the Maritime Affairs, Transport and Infrastructure (MMATI) Propose and implement transport policy. Responsible for the development strategy. Set up provisions and measures for the port development including fiscal and administrative measures.	Implementation of the inland ports action plan to provide the basic infrastructure requirements for the port to stimulate inland waterways transport development and regional development.	Limited financial resources. More efforts have to be made in monitoring and measuring of the effects of the project on the inland navigation development	Implementation of the project would serve the stakeholder's key objective of developing the inland navigation transport sector.
Harbor master Office Vukovar (Captaincy) Responsible for the safety of the navigation and port state control. Formal organization component of the MSTI.	Increase the safety of the vessels in the port and during handling operations.	Highly motivated to set up a safe environment for inland navigation traffic.	Should be included in project implementation for traffic safety study approval.
Port Authority Vukovar Public institution directly responsible for the port management and the functionality of the port.	Create a stimulating environment for the port activities. Increasing competitiveness and larger throughput of cargo.	Limited capacity and know-how in construction projects. Strong influence on the project implementation. Positive project results would have strong impact on future incomes.	Necessary to establish operational structure for managing the project at the construction stage.
Port of Vukovar Ltd. Key port operator performing port activities on a commercial basis. Still under state ownership and control.	Creating better conditions for the port's operational performance.	Interested in continuing as the main port operation company. If another operator is chosen, it will be difficult to survive inter port competition.	Privatization of the company, refinancing by the private investor is highly recommended.
Municipality of Vukovar (City of Vukovar) Local government responsible for implementing policies at the local level.	Contribution to the economic development, employment of labour.	Limited impact on the project implementation and limited financing strength.	More efforts should be made to enhance involvement in the process.
Carriers, shippers and logistic operators Commercial companies involved in the transport sector. Users of the port services.	Improved port services, higher quality of the port services. Increase of the reliability and competitive tariffs and port dues.	Are positively interested, but only if the project implementations will not result in higher port tariffs. Negative impact if normal port operation is not maintained during the construction stage.	Promotion & Marketing office should be established during the construction stage and be port customer-oriented.
Industry, clients Clients of the port, import and export materials for industrial production.	Availability of different kinds of port services. Possibility to expand their business operations to new markets.	Have to include the future port in their own business strategy. The time-frame for implementation of the project should be respected.	Promotion & Marketing office should be established during the construction stage and be port customer-oriented.



Masterplan 4 - RIS related cargo transport management

Objective 3.5

Calamity abatement service

Calamity abatement service provides support in the damage control and other kinds of accident situations on inland waterways. This relates to the procedures that have to be done in order to minimize accident effects.

This service is based on tracking and tracing services via AIS. AIS network records vessel and its transport data at the beginning of the voyage and during its route regularly refreshes these data. If the vessel has no AIS transponder then it has to announce its arrival via VHF to the control centre at the following points:

- At the arrival in the territorial waters,
- At the Drava delta,
- Before entering port of Vukovar upstream and downstream.

Also the ship captain has to report any changes on vessel/cargo data that accrued during the voyage. Depending on the risk assessment Calamity abatement service can register only some of the vessel types or all vessels, for example passenger ships or dangerous cargo vessels. In the case of the accident the RIS control centre delivers data, in accordance to the protocol that still has to be defined, to the State Directorate for Protection and Rescue and other relevant authorities.

Protocol on procedures in the crisis situation on the inland waterways involves coordination among different state institutions and authorities as it is stated below:

- State Directorate for Protection and Rescue
- Environment protection agency
- National water law inspection
- National water management authority
- National/county flood protection centre
- Diving service

Data Gateway Communication Portal

According to the IRIS Master Plan study from December 2005, that was made by a consortium from Austria and Netherlands and sponsored by the Tran European Transport Network (TEN-T), after European RIS implementation, data exchange among different countries RIS centres will be necessary. Data that will be exchanged are following:

- Tactic and strategic information (AIS)
- Cargo and voyage information (ERI)
- Vessel certification information (Hull data)

Software that is used for this kind of data exchange is called RIS communication portal, i.e. data gateway. Each country should have its own communication portal in order to assure decentralized system architecture. RIS centre communication software requires safe internet connection and XML messages that uses SOAP (Simple Object Access Protocol) via SSL (Secure Socket Layer) connection. This represents additional security mechanism, having in mind that messages sent via SSL are encrypted, i.e. available only to its sender and receiver in order to prevent its abuse.

RIS index

RIS index represents a unique identification code for every single infrastructure element that is important for RIS. Location code is an alphanumeric number that consists of 20 digits that represents:

- UN Country code (2 digits)



- UN Location code (3 digits)
- Number of fairway leg (5 digits)
- Terminal code or departure point code (5 digits)
- Fairway leg in hectometres (5 digits)

Inland ECDIS 2.0 standard requires location codes for every object that is important for voyage planning. Also, NtS requires location code in order to define fairway leg and infrastructure objects that are referred in NtS. Location codes represents only machine readable link between ERI, Inland ECDIS and NtS. Considering all above mentioned RIS services will be fully functional only when the location codes will be available and used within different applications. Location codes without additional information are unusable because they provide us with information that some object exists but it is not stated what its name is. Therefore RIS index is used, in order to provide additional information about infrastructure object that is encoded, together with the location code. RIS index should include all objects that are important for:

- Electronic Reporting International (ERI)
- Inland ECDIS
- Notices to Skippers (NtS)
- AIS (water level measuring station)

Hull database

European RIS Directive 2005/44/EC, Directive 2006/87/EC on technical requirements for inland waterway vessels and UNECE recommendations No. 28 (2nd edition) emphasise the importance of unique vessel identification number on the EU level (Unique European Vessel Identification number - ENI) and a minimal hull data set as a precondition of RIS development. Accomplishment of these conditions allows international data exchange on the European level and sets up foundation for further RIS development.

European hull database has two main goals:

- Provides vessel information via ENI and allows vessel search by different criteria such as ENI, vessel name, etc.
- Provides verification possibilities for vessels ENI

Although these databases will be established at the national level, they have to be compatible for international data exchange. Therefore they should contain minimal data set that consists of:

- ENI
- Vessel name
- Vessel type (in compliance with UNECE or EU Directive 2006/87/EC)
- Vessel length
- Vessel width
- Vessel draught
- Vessel height
- Data source
- Total deadweight tonnage (only for cargo vessels)
- Maximal displacement
- Call sign
- IMO number if it is a marine vessel that sails on the inland waterways
- Shipping company/owner
- Manufacturer

Hull database allows following functions:

- Search
- Data import
- Data update



- Data shift

