

D.3.1.1 Methodology for bottleneck collection and harmonization

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1. INTRODUCTION

Methodology for bottlenecks collection is part of work package 3 – Elimination or reduction of Bottlenecks through the Harmonization of Data.

The main objective of this work package is the identification of new physical bottlenecks in the Adriatic area as an improvement and a pursuance of the CARICA activity, updating of CARICA reports on bottlenecks and traffic flows.

CARICA project capitalised the gained results of the IPA CBC Programme 2007-2013 already financed projects ADRIATICMOS (1st call), INTERMODADRIA (2nd call) and EASYCONNECTING (call for strategic projects) dealing with the development of freight transports in the Adriatic-Ionian area and their connections to EU member states.

CARICA general objective was to foster the connectivity between the Adriatic-Ionian regions and improve the coordination at macro-regional level of the decision-making process in maritime transport for the joint implementation of strategies and infrastructural investments, with specific attention to the improvement of the Adriatic Motorways of the Sea. The project also aimed at upgrading intermodal services on the existing maritime links between the two shores of the Adriatic Sea in order to improve the efficiency and environmental sustainability of traffic flows and contributing to solve critical bottlenecks. Specifically, CARICA implemented a joint transnational database of bottlenecks hampering the development of intermodal transport in the Adriatic Ionian area, identified the obstacles about the development of the MoS and the related inland networks from the results of the ADRIATICMOS and prepared specific technical and financial feasibility studies for the upgrading of MoS infrastructure and/or the improvement of intermodal services.

Based on knowledge gained within CARICA project, CHARGE will implement action plan on the development of specific missing link or service for the development of the MoS. CHARGE

projects main goal is to foster traffic flows and sustainable connectivity between Adriatic ports involved and to contribute to competitiveness of territories served by the existing maritime links with a common approach. The aim is to increase the perceived value of shared intermodal transport solutions.

This document main purpose is to give partners an easy-to-use methodology for bottleneck collection and harmonization which will be made visible on all partners web pages.

CHARGE projects activity 3.1 Shared methodology for the harmonization of collected data in the Adriatic Ports consists of two parts:

1) Identification of all the subjects that will be involved in the bottleneck collection in order to gather necessary up-to-date data. A detailed list of all stakeholders (port authorities, freight forwarders, agents etc.) will be created which will result in procedure that will be used for bottleneck identification and solution. All partners will be involved in this process.

2) Methodology for bottleneck collection and harmonization. An easy-to-use methodology will be created in order to help partners in the collection of bottlenecks. The following chapter describe the proposed methodology and the tasks required to partners to provide the necessary inputs for the identification of bottlenecks.

2. ABSTRACT

Methodology for bottlenecks collection presents the methods which will be used in the collection and analysis of bottlenecks in the partner regions of Italy and Croatia. The purpose of the document is to give partners an easy-to-use methodology for bottleneck collection and harmonization which will be made visible on all partners web pages.

3. EXECUTIVE SUMMARY

Methodology for bottlenecks collection presents the methods which will be used in the collection and analysis of bottlenecks in the partner regions of Italy and Croatia. The document contains the questionnaire for bottleneck collection. All partners will receive this methodology as well as template for Report on identification of existing practices, template for Stakeholder database, template for Analysis of the physical and non-physical bottlenecks in Italy and Croatia and excel file with questionnaire to be filled in.

4. METHODOLOGY

This project include partners from Italy and Croatia and all partners will participate in data collecting. Methods to be used for the collection and analysis of bottlenecks are:

- Method of compilation is process of collecting information from various sources and classifying information into various categories. Gathered information should then be analysed and used for report. Researchers can use scientific papers and studies, predictions and recommendations.
- Method of description: This method is used to describe situations. Partners will use it in order to describe the current state of the intermodal (maritime, road, railway) infrastructure and operation.
- Method of comparison: in order to make certain conclusions and estimations this method will be used to compare infrastructure and operation on similar lines
- Statistical methods are mathematical formulas, models and techniques that are used in statistical analysis of raw research data. It will be used to give insights in certain operation and facts the interpretation of statistical data
- Inductive method: Inductive method is method where conclusion is based on general principles of a specific subject. Partners will use this method in order to give certain conclusions from the given facts, figures and predictions.
- Field research analysis: This include interview with stakeholders, where they will answer questions in questionnaire.

To collect all data relevant to bottleneck analysis, all partners will be asked to make a list of all participants (Port Administrations, freight forwarders, agents, transporters, inspections, and everyone who participates in the transport system) and their contact details in order to be able to reach them and cooperate with them in defining of bottlenecks and finding solutions for them.

The following table shows the key stakeholders which contact details should be collected:

STAKEHOLDERS/PORTS	PORT 1	PORT 2	PORT 3
PORT AUTHORITY	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:
HARBORMASTER'S OFFICE	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:
CUSTOMS ADMINISTRATION	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:
MARINE POLICE	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:
PORT PILOTAGE	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:
TOWING	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:
VETERINARY INSPECTOR	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:
PHYTOSANITARY INSPECTOR	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:
SANITARY INSPECTOR	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:	Address: Tel: Fax: E-mail: Web:
RAILWAY OPERATORS	Name: Address: Tel: Fax: E-mail: Web:	Name: Address: Tel: Fax: E-mail: Web:	Name: Address: Tel: Fax: E-mail: Web:
SHIPPING AGENCIES AND AGENTS	Name: Address: Tel: Fax: E-mail: Web:	Name: Address: Tel: Fax: E-mail: Web:	Name: Address: Tel: Fax: E-mail: Web:
	Name: Address: Tel: Fax: E-mail: Web:	Name: Address: Tel: Fax: E-mail: Web:	Name: Address: Tel: Fax: E-mail: Web:

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Partners should then contact these stakeholders and ask them to fill in a questionnaire. This questionnaire will be provided to all partners in excel table (D.3.2.3. CHARGE questionnaire). Partners will ask stakeholders to answer only those questions that are relevant to stakeholder who is filling in a questionnaire. Also, where answers are unsatisfactory, that means, where bottleneck occurred, partners should ask stakeholders to propose possible solutions. For more information on this, see part 3 - Questionnaire for bottleneck collection.

The following data should be collected from operators and stakeholders, to help write Analysis of the physical and non-physical bottlenecks in the Adriatic area:

- Data provided by the operators and other subjects related to maritime infrastructure
- Data provided by the operators and other subjects related to road infrastructure
- Data provided by the operators and other subjects related to rail infrastructure
- Research, statistical data and field studies

To analyse and make recommendation for the road and rail infrastructure it is necessary to analyse freight data and passenger's data for road and rail transport mode as potential demand market. Also it is necessary to analyse the supply side related to road and rail infrastructure such as: main elements on port area, docks, equipment, road and rail main critical aspects of the port infrastructure, presentation of the relevant subjects operating in the port, description of access process to infrastructures, analysis of load/unload capacity, main critical aspects, main infrastructure features of hubs linked to the port including movement modalities and capacity – related to road and rail and detailed analysis on road and rail links from and to the port.

The statistical data for this report can be acquired from many sources, including, but not limited to:

- Official statistical sources such as countries Bureau of statistic and Eurostat
- Official business reports and Annual reports from analysed ports, motorways and railways companies, and other stakeholders
- Scientific papers and articles

This methodology is proposed in analysing of bottlenecks to help assess problems, define their relationships and propose solutions to bottlenecks by defining actions that need to be done. Reports on Analysis of the physical and non-physical bottlenecks in Italy and Croatia (D. 3.2.3.-3.2.4.) should include several chapters:

- Introduction
- Defining the object of study
- Defining the area under study and characterizing said area
- Listing of all bottlenecks and undesirable effects
- Analysing of listed bottlenecks and their causative relations
- Proposing solutions of bottlenecks and analysing how it will affect future freight flows
- Conclusion

Introduction – explain about document, which work package is it part, what is the main goal off the document, and why is it important. A few words about project, work package and deliverable.

Defining the scope of study - It is necessary in correct understanding of what exactly should be researched. So, in this step scope of study will be defined and characterized in order to help us reach next step of research process. The scope of study, covers what, how, when and where the study was done including what data's were taken as inputs, what criteria were used for comparing the data, what was the outcome of the comparison. In this case, main objective of the document investigates traffic flows and bottlenecks in intermodal transportation.

Defining the area under study and characterizing respective area - It is important to define the geographical area where analysis will be conducted in order to determinate volume of data that need to be collected. Also, by characterizing area under study, we can determine the current situation of the area. That enable us to focus our analysis on current problems and help us in finding all potential bottlenecks, as well as proposing solutions for said bottlenecks to enable freight flow system to work efficiently.

Listing of all bottlenecks and undesirable effects – next table shows a questionnaire that all ports will be asked to fill in order to identify current state of the art in the ports. A bottleneck is emerging when answers on these questions are unsatisfactory for the stakeholders.

5. Questionnaire for bottleneck collection

Bottleneck		Question	Answer	Relevance	
infrastructural bottlenecks	road	safety	Is the connection between the terminal and highway network at a satisfactory safety level?		
			Is there a regular maintenance of the terminal roads and connection between the terminal and highway network?		
			Are there clearly marked routes for accessing the terminal and leaving the terminal in order to reach the highway network?		
			Is there adequate (satisfactory) lighting on the terminal roads and connection between the terminal and highway network?		
		flow capacity	Are there clearly marked routes to get to the terminal and to the highway network?		
			Is there a direct access to the highway network?		
			Is the current capacity of the road infrastructure sufficient?		
			Is there a sufficient number of lanes on terminal roads and connection between the terminal and highway network?		
	rail	safety	Is the width of the lanes on the terminal roads and connection between the terminal and highway network appropriate (satisfactory)?		
			Is the connection between the terminal and highway network passing through the urban and inhabited area?		
			Is there a road and pedestrian crossing on the railway?		
			Is the signalization on a satisfactory level?		
		flow capacity	Is there adequate (satisfactory) lighting on the terminal railway infrastructure?		
			Is there a regular maintenance of infrastructures relevant for the satisfactory level of security?		
			Is there a road and pedestrian crossing on the railway?		
			Are the crossings satisfactory marked?		
	inland waterways	safety	Is the current capacity of railway infrastructure satisfying?		
			Is it the connection of railway and road infrastructure at a satisfactory level?		
			Is it possible to dispatch the maximum allowed quantities of the train at once?		
			Is there a ramp for the loading/unloading of the trucks on the railway?		
		flow capacity	Is the safety level of the port access satisfactory?		
			Is the area of the port basin sufficient?		
			Is the capacity of the access to the terminal sufficient so the barges shouldn't be separated?		
			Is there a RO-RO ramp on the terminal?		
terminal	capacity	Are the parking spaces adequately signposted for identification?			
		Is the capacity of a parking lot sufficient?			
		Is parking space able to accommodate all dimensions of the vehicles / units?			
		Are the roads at the terminal separated from waiting areas for the loading / unloading cargo?			
		Is the number of berths for mooring ships sufficient?			
		Are the lengths of berths sufficient for mooring the largest vessels?			
		Are the sea depth/draft berths enough for the biggest ships?			
		Is the sea depth in the driveway shore/terminal satisfactory for the biggest ships?			
	safety	Is there a storage space near the berth?			
		Does the space for storage of goods have sufficient capacity?			
		Does the terminal (individual bindings) have conditions of secure mooring?			
		Is the sea access to the terminal sufficient (maritime safety requirements)?			
weather	How much time a year is the terminal out of function for bad weather?				

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a supply chain bottlenecks	work shifts	Is it guaranteed cargo handling 24 hours a day every day of the year? Is there a guaranteed flexibility in the composition of stevedoring crews and handling equipment to absorb demand peaks in loading / unloading services?		
	information exchange	Is there a system which allows the electronic exchange of documents and communications between the driver unit and the terminal?		
	time response	PILOTS - Is it the time required from the request to reaction at a satisfactory level? TUGS - Is it the time required from the request to reaction at a satisfactory level?		
	cooperation	Is the cooperation between the terminal and the agent at a satisfactory level? Is the administrative co-operation of the terminal and Ship at a satisfactory level?		
	technology	Is the cargo handling capacity of the terminal sufficient? Does the shore cranes terminal have sufficient performance /capacity? Does the mobile cranes terminal have sufficient performance /capacity? Is there in the function the VTMS system?		
regulatory bottlenecks	customs	Is the cooperation between the Customs Authority and Ships at a satisfactory level?		
	inspections	Is the time required for inspection (veterinary, phytosanitary, etc.) at a satisfactory level?		
	cabotage restrictions	Are there any cabotage restrictions?		
	other	Is there an exemption obligations pilots for ships in service, which regularly touch the port? Is there an exemption obligations tugs for ships in service, which regularly touch the port?		

Legend:

Answer – here stakeholders need to give simple yes/no answer. If answer is unsatisfactory (e.g. it is making difficulty in transportation) that means that that part generated possible bottleneck.

Relevance – in this part partners should write how important that part is for the port, and is it reason for bottleneck?

Will reduction of that problem solve bottleneck? This column should be filled in only in case if column „Answer“ generated possible bottleneck.

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After bottlenecks are found, they should be listed by priority. This priority list is created by partner who is writing a report. Partner should explain what are the most important problems to solve first for each port.

Analysing of listed bottlenecks and their causative relations - This step help us understand real problems in freight transportation chains, and how one bottleneck can cause more than one problem, and can affect one another. In this step, all bottlenecks should be divided in categories to help us in better understanding. Also, relations between bottlenecks should be drawn, so we can see how solving of one bottleneck can help us solve the other.

Proposing solutions of bottlenecks and analysing how it will affect future freight flows - once all bottlenecks are listed and analysed, it is time for proposing solutions and analysing how it will affect future freight flows. There should be proposed solutions for all bottlenecks. For some bottlenecks, more than one solutions could be proposed. Then, the one that have the most desirable outcome should be chosen. Also, all solutions should be analysed to show us if proposed activity actually eliminate bottleneck and how it affect freight flow in whole.

Conclusion - this chapter should be summary of all that is already said and conclusions that are reached during the research should be elaborated.

6. CONCLUSION

All partners will receive this methodology as well as template for Report on identification of existing practices, template for Stakeholder database, template for Analysis of the physical and non-physical bottlenecks in Italy and Croatia and excel file with questionnaire to be filled in regarding bottleneck survey proposed in this methodology. Questionnaire will be conducted via excel template. Partners should first collect information about stakeholders that will help in collecting bottlenecks. Then, partners will collect stakeholders feedbacks on bottlenecks issues.

Also, all partners should make a Report on identification of existing practices. This report will contain information on past EU projects dealing with the issue of bottleneck reduction and solution. For more information, see Annex 1.

ANNEX 1 - Identification of existing practices

All partners will write a Report on identification of existing practices. This report will contain information on past EU projects dealing with the issue of bottleneck reduction and solution. Related past EU projects are Intermodadria, Easyconnecting, AdriaticMoS, Watermode, Sonora, FutureMed, Carica etc.

This report should be simply structured, and short. It should give short description of partner involved in the project, in what past EU project partner was involved and what its role was. It should also explain what is current practice to promote intermodality and reduce bottlenecks.