



“NETWORK OF DANUBE WATERWAY ADMINISTRATIONS”
South-East European Transnational Cooperation Programme

NATIONAL STRATEGY PLAN FOR OPTIMISATION OF WATERWAY MAINTENANCE IN ROMANIA

FOR THE PERIOD 2011-2020

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1 LIST OF ABBREVIATIONS

AGN	European Agreement on Inland Waterways of International Importance
BoD	Board of directors
CCNR	Central Commission for Navigation on the Rhine
DC	Danube Commission
EU	European Union
EUR	Euro
HENS	Hydroelectric and Navigation System
IWT	Inland waterway transportation
IWW	Inland Waterway
km	Kilometre
NEWADA	Network of Danube Waterway Administrations
rkm	River Kilometre
ROM	Romania
SEE (Programme)	South East Europe Transnational Cooperation Programme
WP	Work Package

2 SCOPE OF DOCUMENT

A river divides and unite in equal measure, and the natural border of Danube are so many European countries, as well as an excellent way to enhance navigation and communication among countries and regions. The Danube is thus destined to be the backbone of a building to be included in macro-regional, looking for common welfare, provinces, regions and countries of the EU.

In this context, taking into account the importance of waterway infrastructure, this document is focused on developing a national strategy plan for maintenance of the waterway.

This document is based on waterway maintenance activities on the Danube River in Romania in order to developing the transport corridor No. VII Constanta - Rotterdam and ensuring the minimum conditions for the development of traffic safety of navigation.

The strategy plan is in line with the existing strategic documents, including the EU Strategy for the Danube Region (2010), National Strategy for Transport Development (2007) , largely in line with European policy in matters defined in the "White Book", seeking to support the overall goal of ensuring the sustainability of transport.

The strategy is planning for a period of 10 years, take into consideration the current status of infrastructure on the Danube River, different solutions for their regulation, maintenance of the dredging interventions, measurements activities and the waterway management of AFDJ.

3 BACKGROUND INFORMATION

The plan contains the basic information on the NEWADA project and its WP4, national IWW info, the national and international legal framework related to IWW.

The information refers to marking system, about common sector (Serbia - Romania, Romania - Bulgaria), bottlenecks, surveys and they are correlated to neighbouring countries.

3.1. NEWADA and WP4 info

The NEWADA (Network of Danube Waterway Administrations) project is co-financed under the South East Europe Transnational Cooperation Programme (SEE Programme) of the European Union. It is a three years project (2009-2012), which objective is to improve international cooperation (in the fields of hydrography, hydrology, waterway maintenance, as well as information and communication technologies on IWWs)-figure 1.

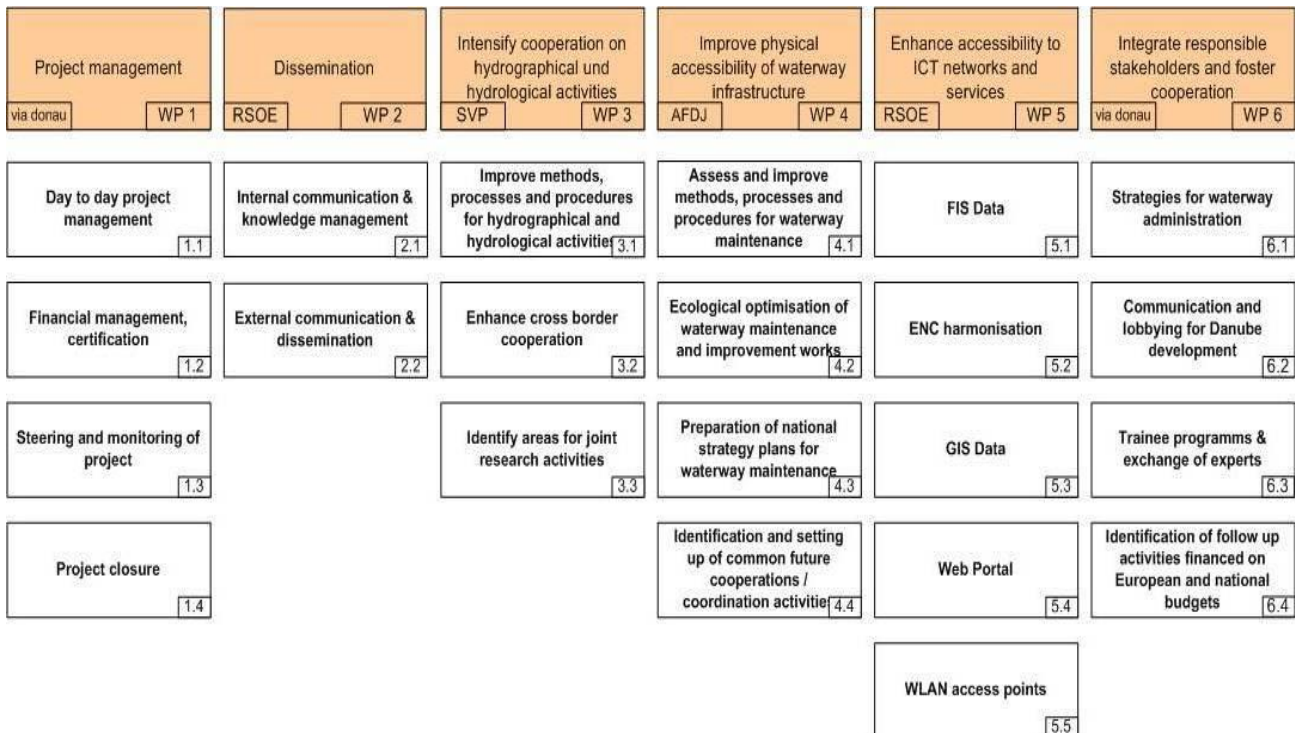


Figure. 1 Work package overview

The objective of activity (WP4) is to improve physical accessibility of waterway infrastructure in the frame of standards and RIS Directive and the subtask is Activity 4.3, which has aimed at achieving the strategy plan for optimisation of waterway maintenance.

The project aims to increase the Danube river as European transport corridor VII through enhanced cooperation between the waterway in order to promote inland waterway transport as a way of environmentally and economically efficient.

Activity 4.3 is partly based on the status quo report on hydrological and hydrographical activities as well as on outcomes of enhanced cross-border cooperation within activity 3.2 and will contribute to identify and prepare follow-up activities in future common projects.

3.2. National IWWs info

3.2.1. *General overview of the Romanian Danube stretch*

The most important inland waterway in Romania is the **Danube River**, a Pan-European Corridor VII, in terms of water potential.

On the Romanian Danube River, AFDJ is the waterways authority for administration the waterway infrastructure from the border line - km 1075 to the river mouth, in the Black Sea, on Sulina branch, in Sulina roadstead, on the shipping branches of the Danube, Borcea, Bala, Macin, Valciu, Caleia, on Chilia branch with its secondary branches, on Sfantu Gheorghe channel and the main task, is the assurance of navigation conditions on Danube by means of dredging works, topohydrographical survey, coast and floating signalization, piloting on the maritime Danube sector, between Sulina roadstead and Braila and in the Danube maritime ports, special transport on the river and maritime Danube, internal and international tugging etc.

On Romanian sector, Danube has a length of 1075 km and the leakage scheme is divided into two Romanian sector: upstream lake regime Iron Gates Hydropower System (situated at 863 river km and 943 river km) and the free flow downstream (figure 2).

Figure2: overview on the Romanian sector of the Danube

Because settlement catchment, and the fact that the Danube is the main collector of the hydrographic network, the Danube hydrological regime is characterized by the existence of large variations in the level and flow in the year and over the time, and is a complex sector with a wide dynamic throughout its course.

Danube temperature water is under the direct influence of air temperature. Throughout its tributaries river has a number of important issues affecting the drainage system: Olt, Jiu, Arges, Siret, Prut and also having a large input of silt contributing to changes in hydrological regime.

Also, in this sector there are two hydro-power plants and locks (Iron Gate I and Iron Gate II) and a number of five bridges: Moldova (rkm 1045), Calafat (rkm 796), Giurgiu (rkm 488), Cernavoda (rkm 300), Fetesti (Borcea arm).

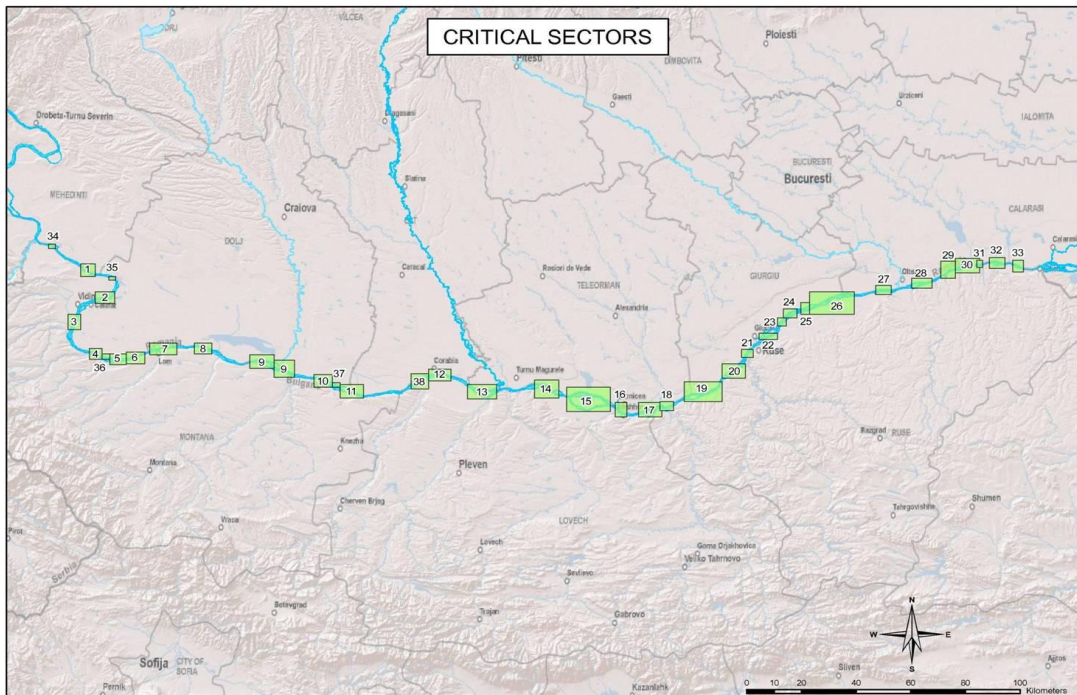
The length of the Danube River in Romania is 1075 km, out of which 470 km is a joint section with Bulgaria (from 375 rkm to 845 rkm), 230 km is a joint section with Serbia (from 845 rkm to 1075 rkm).

3.2.2. Current status of infrastructure

In Romania, the waterway management is under authority of AFDJ, which seeks the activity object is the assurance of navigation conditions on Danube by means of dredging works, topohydrographical survey, coast and floating signalization, piloting on the maritime Danube sector between Sulina roadstead and Braila and in the Danube maritime ports, special transport on the river and maritime Danube, internal and international tugging as well as carrying out the obligations of the Romanian state according to the international conventions and agreements to which Romania is part.

Maintaining a waterway is part of a complex system of administration, of which the main activities they represent measurements (river bed and river bank, bathymetrical surveys, water levels), marking the navigable channel, dredging works (for calibration the fairway), transmitting information to users and their and their monitoring.

For the past twenty years, there had been no major public investments in the IWW infrastructure in the Republic of Serbia. This practice resulted in the number of bottlenecks which occurred on the Danube River, located between Bezdán and Preliv. Depending on hydrology conditions, these bottlenecks are jeopardising safe navigation. Regulation of these sections requires substantial financial resources, as well as expertise needed for preparation of proper designs. Half of them are located at the Serbian-Croatian joint section of the Danube River, so coordinated approach is required.



3.3. Legal framework

Legal framework for inland waterways is defined on three levels: international, bilateral and national.

3.3.1. International legal framework

International legal framework consists of strategic documents and multilateral agreements. The **EU Strategy for the Danube Region** was adopted by the European Commission on 08th of December 2010. This is the first EU strategy in which preparation countries outside of EU were included, Serbia among them. The strategy is based on three pillars: establishment of the system for safe navigation and development of transport infrastructure, environmental protection and sustainable use of natural resources, and economic development and strengthening of the regional cooperation and partnership in the Danube region. All activities contained in this plan must be in line with this strategy.

With a view to ensuring the development of internal water transport as an important factor of the European market and eliminate or mitigate the disadvantages and maximize the constraints on the development and operation of this form of transportation, on 19 January 1996 in Geneva The European Agreement on Main Inland Waterways of International Importance (**AGN Agreement**) has been made and accepted. AGN agreement sets out uniform technical and operational parameters that need to be provided on the European waterways and ports of international importance. To achieve the parameters of the fairway on the Danube in Serbia, according to the requirements of this agreement, in some sections is necessary to carry out large-scale hydro-technical works. The signing and ratification of this Agreement by the Republic of Serbia is one of State priorities, and the process was initiated in 2010.

The **Danube Commission** is an international organization with which the Republic of Serbia and former Yugoslavia mostly cooperated, both in the past and nowadays. It was established in 1948 by seven countries bordering the river. The official languages are German, French and Russian. Each country has one representative on the commission, between which a term of three years elected president, vice president and secretary. The aim of the organization is to free navigation on the Danube and the protection of the interests of riparian countries, as well

as creating better and more uniform conditions of navigation in all navigable parts of the Danube by:

Supervising the implementation of the international convention that set it up in 1948.

Unifying the regulations governing river, customs and sanitary inspection.

Harmonizing regulations on inland navigation with the European Union and with the Central Commission for the Navigation on the Rhine.

Collecting statistical data on aspects of navigation on the Danube within the commission's competence.

Publishing reference works, sailing directions, nautical charts and atlases for purposes of navigation.

As the most influential step of the Danube Commission towards unification parameters of navigability on the Danube is considered the recommendations adopted to ensure the minimum dimensions of the fairway as a part of the waterway (Recommendations Relatives A L'Établissement Des Gabarits Du Chenal, Des Ouvrages Hydrotechniques Et Autres Sur Le Danube). As such, it is defined through its depth H , width B and radius of curvature R . Values and variations of these parameters directly reflect the conditions in the fairway. Their required values are determined criteria for the analysis of the waterway parameters.

3.3.2. Bilateral agreements

The following agreements were concluded:

- Bilateral agreement between the governments of Romania and the Soviet Union, Moscow 1953 - as to the functioning of the River Administration of the Lower Danube of Galati, for the maintenance of the fairway and the accomplishment of hydrotechnical works on maritime Danube sector (Sulina - Braila);

- Bilateral agreement between the governments of Romania and the People's Republic of Bulgaria, Sofia 1955 - as to the maintenance and improvement of the navigation fairway on the Romanian - Bulgarian sector of Danube between km 375 and 845.5;
- Bilateral agreement between the governments of Romania and the Federative Socialist Republic of Yugoslavia, Belgrade 1976 with regard to the establishment and control of application of navigation rules, maintenance and improvement of navigation conditions on the sector where Danube is border line between the two states from km 845.5 to km 1075.

3.3.3. National legal framework

The "Lower Danube River Administration" Galati is a Romanian legal person operating as autonomous administration under the authority of the Ministry of Transports and Infrastructure of Romania, in compliance with the provisions of the Decision no. 492/2003 of the Romanian Government and those of the international conventions and agreements in which Romania is part.

Om...1057/2008, pentru RIS in Romania..

RND...ordin de ministru

4 THE SUBJECT OF THE PLAN

Purpose of the plan is to optimisation the activities for waterway maintenance and **to enhance the cooperation on specific activities**, especially in the **cross-border region**, where there is a lot of potential for optimisation. In this respect, national strategy plans will be prepared **to enhance the quality of these activities, development of traffic safety of navigation and the transport corridor No. VII Constanta-Rotterdam.**

The strategy plans are in line with the existing strategic documents, including **the EU Strategy for the Danube Region (2010), National Strategy for Transport Development** , largely in line

with European policy in matters defined in the "**White Book**", seeking to support the overall goal of ensuring the sustainability of transport.

5 OBJECTIVE AND GOALS

5.1. Long Term objective :

Improve the quality information for the users. (10 years)

- **Waterway – improve the conditions;**
- **Administration – development the services;**
- **Customer – needs of users;**

5.1.1. Waterway – Improve the conditions

5.1.1.1. Geodetical Network benchmark along the Danube;

Waterway – Mid Term objective (1-3 years):

Taking into consideration **the damage of the old network along the Danube**, was started a project for execution for geodetical network well developed;

This network will help to **development the river transport by achievement the hydrographical measurements to provide the navigation depths;**

The network cover all **Romanian Danube sector, Danube Delta and Danube-Black Sea Canal;**

The feasibility study and the technical specifications are completed;

The implementation period is **two years;**

Total investment is **1.000.000 euro;**

The project is funded by **the UE funds – POS-T;**

The project is in stage of tender preparation.

5.1.1.2. Hydrometeo Network station on the Danube;

Waterway – Mid Term objective (1-3 years):

As a basic activity to a waterway maintenance, hydrometeo stations should be modernized and equipped with devices to ensure proper data quality;

Will also consider the rehabilitation of hydrometeo stations and equipped with necessary construction and equipment;

This will increase the quality of data, their transmission rate, using the information on how many users;

Time implementation - 3 years;

Necessary funds will be obtained by UE funds and own financing;

5.1.1.3. Feasibility study for the Hydrometeo Network station;

Waterway – Short Term objective (<1year):

To know the characteristics and technical parameters is necessary to make a feasibility study for all hydrometeo stations located in the Romanian sector of Danube;

This study will help to determine the technical specifications for the rehabilitation and modernization of hydrometeo stations – locations, parameters, drainage system, constructions, equipment, etc;

The feasibility study will be developed for a number of 23 stations;

Time implementation – 10 months;

Necessary funds will be obtained by UE funds and own financing;

5.1.1.4. Pilot project for 3 hydrometeo station;

Waterway – Short Term objective (<1year):

Considering the importance and complexity of action for rehabilitation and modernization of stations Hydrometeo stations, we plan to start a pilot project for a total of three stations;

The results of this pilot project will help and will guide activities for the rehabilitation of other hydrometeo stations ;

Time implementation – 8 months;

Necessary funds will be obtained by UE funds and own financing;

5.1.1.5. Technical assistance for the improvement of navigation conditions on the Romanian-Bulgarian common sector of the Danube and accompanying studies

Waterway – Mid Term objective (3 - 5 years):

Taking into consideration **the bottlenecks, along the Danube, common sector with Bulgaria,** was started a project for execution the works to improve the navigation conditions;

The feasibility study are completed;

The implementation period is five **years (5 years)**;

Total investment is **180.000.000 euro**;

The project is funded by **the UE funds – POS-T**;

5.1.1.6. Improvement of the navigation conditions on the Danube between Calarasi and Braila, and accompanying measures

Waterway – Mid Term objective (3 years):

Taking into consideration **the bottlenecks, along the Danube, on the sector Calarasi and Braila,** was started a project for execution the works to improve the navigation conditions;

The feasibility study are completed and the works is started;

The implementation period is five **years (3 years)**;

Total investment is **38.000.000 euro**;

The project is funded by **the UE funds – POS-T**;

5.1.2. Administrations - development the services;

5.1.2.1. Experts for administration the Hydrometeo station, procedure for collecting the information, preparation;

Administration-Mid Term objective (1-3 years)

With the modernization of stations and to increase the quality of information , staff training is needed for serving these stations, processing and forecasting;

This will lead to **the provision of quality data**;

Time implementation is **18 months**;

Necessary funds will be obtained by **UE funds and own financing**;

5.1.2.2. Database for HM;

Administration Mid Term –OBJECTIVE (1-3 year)

Taking into account the study hydraulic regime, geomorphological evolution of the river, mathematical modeling, statistics and other studies, it is necessary to create a database with information collected from these stations;

Database contains all the hydrological and weather information to the entire period of stations operation, structured on data types, periods, statistics, etc.

Time implementation is 2 years;

Necessary funds will be obtained by **UE funds and own financing**;

5.1.2.3. Including the new parameters (database, mathematical models);

Administration Short Term –OBJECTIVE (<1year)

In order to develop databases and the possibility to develop complex mathematical models (WLM, forecasts, etc.) **will study and identify new parameters**;

Time implementation is **10 months**;

Necessary funds will be obtained by **UE funds and own financing**;

5.1.2.4. Joint Group for the interrelation of the hydrography and signalisation Ro – Bg and Ro – RS;

Administration/ST – objective (<1year)

To correlate the signaling plans is necessary to establish a **joint working group Ro – Bg and Ro – RS** ;

Time implementation is **8 months**;

Necessary funds will be obtained by **UE funds and own financing**;

5.1.3. Customer – needs of users;

5.1.3.1. Identification and implement the new tools for communication;

Customer – MT objective (1-3 years)

For users information and increase navigation safety, **will identify and implement new tools (systems) for communicating and transmitting information in a timely manner;**

will improve existing and develop new information systems - **increasing the number of networks, increasing the frequency of transmission of information, etc;**

Time implementation is **2 years;**

Necessary funds will be obtained by **UE funds and own financing;**

5.1.3.2. Identification the users;

Customer – ST objective (<1 year)

For a short term goal we intend to identify new users for information that we provide them;

This will be done by studying the current status of the information used by the users, any additional requirements, providing new services, etc;

Previously, a study will be conducted in this regard and will be organized workshops and questionnaires that can be identified in new services, new information, **to increase the quality of information and development of transport corridor No. VII, in accordance with EU strategy for the Danube region;**

Time implementation is **10 months ;**

Necessary funds will be obtained by **UE funds and own financing;**

activities	category	Objectives and goals	timeline	Funding issues	Monitoring
IWW	LT	<i>Improve the quality information for the users</i>	60 months	EU funds. Ro funds	MoT
Waterway	MT	<i>1.Geodetical Network benchmark along the Danube.</i>	24 months		MoT National Authority
		<i>2.Hydrometeo Network station on the Danube.</i>	36 months		
<i>3. Technical assistance for the improvement of navigation conditions on the Romanian-Bulgarian common sector of the Danube and accompanying Studies;</i>		60 months			
<i>4. Improvement of the navigation conditions on the Danube between Calarasi and Braila, and accompanying measures</i>		36 months			
	ST	<i>1.Feasability study for the Hydrometeo Network station.</i>	10 months		AFDJ
		<i>2.Pilot project for 3 station.</i>	8 months		
Administration	MT	<i>1. Experts for administration the hydrometeo stations, training.</i>	18 months		AFDJ NA
		<i>2. Database for hydrometeo stations.</i>	24 months		
	ST	<i>1.Identification for the new parameters (database, mathematical models).</i>	10 months		AFDJ APPD PLOVPUT
		<i>2.Joint Group for the interrelation of the Signalisation Ro-Bg.</i>	8 months		
Customer	MT	<i>1.Identification and implement the new tools for communication.</i>	24 months		AFDJ MoT
	ST	<i>1.Identification the users.</i>	10 months		

6 ACTIVITIES

7 IMPLEMENTATION PLAN

This plan contains the specification of activities which are foreseen to be performed in the next 10 years. Implementation of these activities requires both time and financial resources.

The following table contains timeframe information regarding finances (budgeting periods), implementation of foreseen projects from technical point of view and expert meetings

(Table).

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
BUDGETING TIMELINE										
EU Budget period up to 2015										
Budget state										
IMPLEMENTATION OF PROJECTS										
Geodetical Network benchmark along the Danube.										
Hydrometeo Network station on the Danube.										
Sector comun										
Calarasi braila										
Feasability study for the Hydrometeo Network station.										
Pilot project for 3 station.										
Experts for administration the hydrometeo stations, training.										
Database for hydrometeo stations.										
Identification for the new parameters (database, mathematical models).										
Joint Group for the interrelation of the Signalisation Ro-Bg and Ro-RS										
Identification and implement the new tools for communication.										
Identification the users.										
Monitoring experts meetings acgtivities										

Table: Implementation timeline

This timeframe is susceptible to adjustments, depending on the efficiency of the execution of proposed activities.

Regular revision of the document is foreseen to be performed every two years. The proposal for the revision is to be prepared by the implementing body, and to be authorized by the monitoring bodies.

8 MEASURES AND INDICATORS

9 MONITORING AND EVALUATION

10 OTHER ISSUES/ASPECTS

n/a

11 APPENDIX