

Paper 165 - Integrated project planning in inland waterway project

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ABSTRACT: Planning and implementing a river engineering project in modern times requires a different approach than the traditional one. It is hardly possible these days to have separated objectives in water related project, focusing only on one sector, whether it is navigation, environment, flood protection, energy, or something else. A new, integrated approach is necessary, in order to properly assess and evaluate costs and benefits for all areas of interests, which means for the whole society. The Stakeholders' Forum of the project “Preparation of documentation for River Training and Dredging Works on Critical Sectors of the Danube River in Serbia” is established in line with the long-term orientation of Plovput towards the application of the modern concept of integrated inland waterways management.

1 INTRODUCTION

The Directorate for Inland Waterways Plovput is the beneficiary of the EU funded project “Preparation of documentation for River Training and Dredging Works on Critical Sectors of the Danube River in Serbia”. The goal of the project is the preparation of documentation for works that would enable minimum navigable depth and width of the fairway during the low water periods. Measures which are under consideration include the combination of structural and non-structural interventions. Documentation within this project is being prepared in line with Serbian legislation, as well as in line with the relevant EU and international legislative framework.

The basic approach within the project is to establish conditions which would ensure minimum navigable depth and width of the fairway of the Danube River during the low water periods, while respecting environmental interests. Adopted guidelines for the development of the documentation within this project include: preserving connectivity conditions of the water bodies, preferable application of detached structures, preserving sediment equilibrium, and ensuring mitigation measures.

2 ABOUT THE PROJECT

Project “Preparation of documentation for river training and dredging works on critical sectors on the Danube River in Serbia” was kicked-off in 2011. The project is 100% funded by the European Union,

under the IPA 2010 Programme. The consultancy team is led by the Witteveen+Bos from Netherlands, while members of the consortium are DHI from Denmark and Energoprojekt from Serbia. The project is designed in such a way that application of both Serbian and EU legislation is required. Serbian strategic and legal framework, as the project is being implemented in the Republic of Serbia by the responsible governmental institution. EU strategic and legal framework, as the project is being funded by the EU and as the Republic of Serbia is the candidate country for the EU membership at the beginning of the negotiation process of the EU accession.



Figure 1: Country in focus - Serbia

The main objective of the project is preparation of documentation for river training and dredging works in order to enable and improve safety of navigation along the critical sectors of the Danube



River in Serbia during periods of low water levels. In order to achieve this objective, the following basic steps have been taken:

1. 1D hydraulic modeling in order to determine critical sectors for navigation, by using hydrographical data from the last 25 years (long data series ensures proper assessment and forecasts of future navigation conditions);
2. Defining a basic project orientation (in relation to the ICPDR’s *Joint statement on guiding principles on development of inland navigation and environmental protection in the Danube River basin*), interpreted as:
 - a. Preserving connectivity conditions of water bodies;
 - b. Preferable application of detached structures;
 - c. Preserving sediment balance; and
 - d. Ensuring mitigation and compensation measures.
3. 2D hydrodynamic and morphological modeling, in order to evaluate hydro-morphological impacts of different alternative options;
4. Promoting and enabling public participation within the Stakeholders’ Forum without any restrictions;
5. Collection of primary and secondary data related to biodiversity, water quality, sediment quality, etc.
6. Multi-Criteria Analysis (MCA), where basic criteria are:
 - a. Impact to navigation conditions
 - b. Impact to environment
 - c. Technical feasibility
 - d. Costs;
7. Preparation of the Feasibility Study;
8. Preparation of the EIA Study.

Details of modeling procedures and conclusions on the morphological changes of the Danube River in Serbia can be found in the papers *Environmental friendly river training designs to improve the navigation fairway of the Danube between the Hungarian Border and Belgrade* by Zujderwijk et al, and *Morphological Changes of the Danube River in Serbia*, by Muskatirovic et al., prepared for the Smart Rivers 2013 Conference as well.

In the preparation of the EIA study, different tools have been used and different analyses have been performed:

1. Data collection and integrated mapping of all protected areas (of all levels of protection) in project designs and layouts;
2. Identification and integrated mapping of important habitats of different protected species in project designs and layouts, also

- needed for the proper assessment of the current status of the environment;
3. Primary data collection on sediment quality focusing on identified critical sectors (as available official data on sediment quality are limited to the locations of gauging stations), needed for the proper assessments and implementation of the sediment balance principle;
4. Analysis of the hydrographical (25 years) and hydrological (60 years) data series of the Danube River, in order to properly determine current status and likely future trends;
5. Project conditions issued by the relevant governmental institutions, related to environmental and nature protection, in order to identify potential conflict areas and time and location related limitations for river training and dredging works;
6. Assessment of hydro-morphological impacts of different alternative options;
7. In-depth analysis of the environmental criteria within the MCA;
8. Excluding and overriding capacity of the environmental criteria (40% ponder) compared to navigation and cost criteria within the MCA, as well as in the sensitivity analysis (60% ponder);
9. Establishment of the Stakeholders’ Forum as a framework for the unrestricted public participation;
10. Development of DEM of critical sectors and filed trips in order to assure wider understanding of the project within the general public.



Figure 2: Project stretch



After finalization of the EIA procedure, next steps in implementation of the project will include:

1. Preparation of main designs for works on 6 critical sectors on the Danube River in the Republic of Serbia (*Figure 2*), located between Backa Palanka (km 1295) and Belgrade (km 1170);
2. Technical revision of main designs;
3. Preparation of tender documentation for:
 - a. River training and dredging works on 6 critical sectors, containing budget allocation for compensatory measures
 - b. Supervision and environmental monitoring of works, in order to ensure proper data collection and analysis before, during, and after river training and dredging works, so that the need for mitigation and compensation measures is instantly recognized and proper measures taken.

3 PUBLIC PARTICIPATION

Strategic and legal framework for implementation of river engineering projects is quite complex and extensive. The following fields are relevant: transport, spatial planning, construction, environmental and nature protection, water management, archaeology, and public participation.

A special attention has been given to the public participation topic, which is of the critical importance for successful implementation of such a project. The most important initiatives and documents for the public participation are:

- Serbian law on availability of information of public interest;
- EU Directive on Public Participation (2003/35/EC)
- Serbian law on EIA;
- EU EIA Directive (85/337/EEC, 97/11/EC);
- Danube River Protection Convention
- Joint statement on guiding principles development of inland navigation and environmental protection in the Danube River basin (International Commission for the Protection of the Danube River, Danube Commission, and International Sava River Basin Commission);
- Aarhus Convention;
- UN Rio Declaration on Environment and Development.

Public participation is further developed in a number of practical guidelines, such as:

- EU Guidance document on Inland Waterway Transport and Natura 2000; and

- PLATINA manual on good practices in sustainable waterway planning.

Public participation topic is one of the most important factors of successful project implementation in the field of river engineering. It is also a precondition for integrated project planning process.

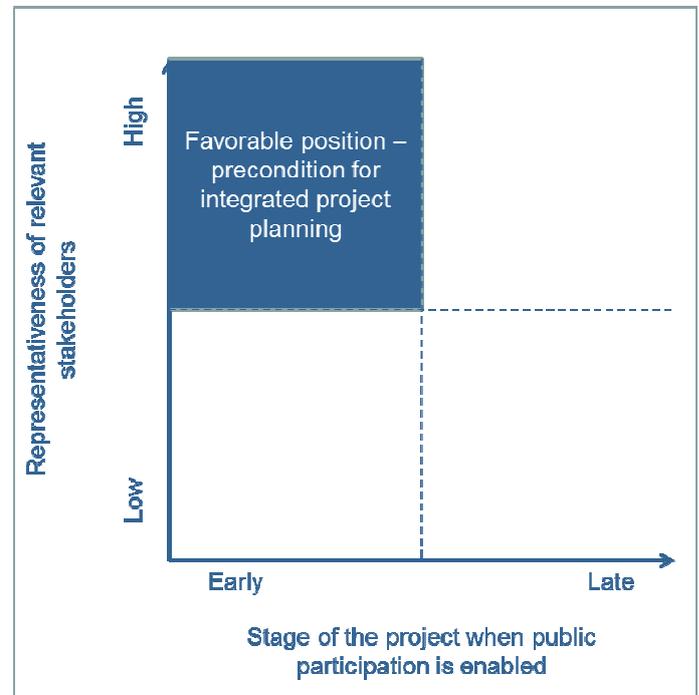


Figure 3: Public participation matrix

Public participation matrix is presented in the *Figure 3*. This matrix is a useful tool which can be used for evaluation of the level of success of the public participation and transparency of the project planning process. Favorable position in the matrix is a situation when relevant stakeholders are identified and consultation process with project developers is enabled at the very beginning of the project planning process.

Criteria “Stage of the project when public participation is enabled” is the critical one. If consultations process with the stakeholders is not opened at the very beginning, successful implementation of the project is uncertain, since it is not the criteria which can be improved over time. On the other hand, criteria “representatives of relevant stakeholders” is a dynamic one and can be improved over time, by including stakeholders identified as relevant at the later stages of the project.

Integrated project planning matrix is presented in the *Figure 4*. Next to representativeness of relevant stakeholders, criteria “diversification of project objectives” is introduced. Favorable position in the matrix is a situation when relevant stakeholders are identified and included in the planning process, and

when their objectives are being acknowledged and integrated in the project.

second meeting of the Stakeholders’ Forum held in July 2012 in Belgrade.

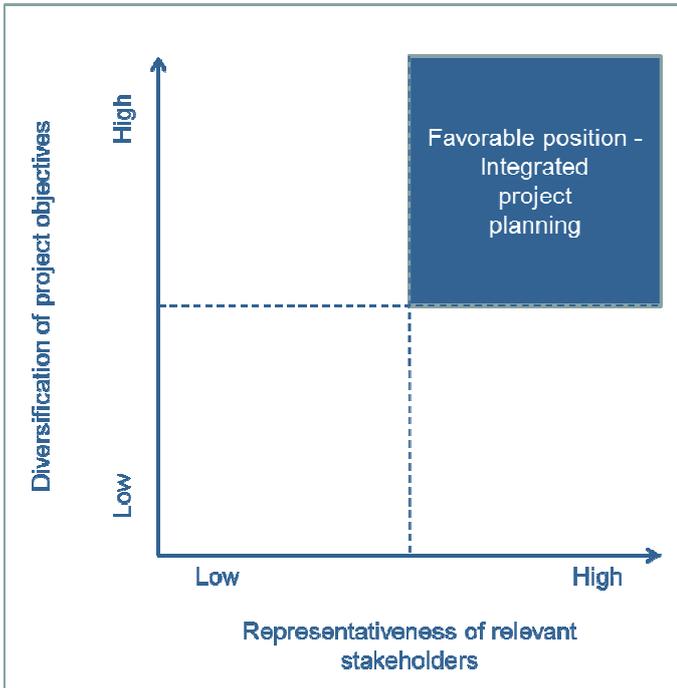


Figure 4: Integrated project planning matrix

Dietz, T. & Stern, P. C. (2008) argue that the way a public participation process is conducted can have more influence on overall success than the type of issue, the level of government involved, or even the quality of preexisting relationships among the parties.

4 ESTABLISHMENT OF THE STAKEHOLDERS’ FORUM IN SERBIA

The Stakeholders’ Forum of the project in Serbia is established in line with the long-term orientation of the Directorate for Inland Waterways Plovput towards the application of modern concept of integrated inland waterways management. Integrated inland waterways management considers orientation towards harmonization of interests of different stakeholders, respecting national and international legal frameworks, including, among others, the Joint Statement on Guiding Principles on Inland Navigation and Environmental Protection in the Danube River Basin.

Basic principles on which this Forum has been established include: voluntary and free of charge membership, mutual acknowledgment and respect of different standpoints of the Forum members, and transparency of work. Those basic principles, together with the rules on organization and work of the Forum, are part of the General rules on organization and work of the Forum, a document which have been accepted by all participants at the



Figure 5: Stakeholders’ Forum meeting no. 3

Rules of procedure, next to starting provision, contains nine articles named as follows: purpose and goal of the organization of the Forum, basic principles of the work and membership in the Forum, tasks of the Forum, members of the Forum, observers of the Forum, organization of meetings of the Forum, languages of the Forum, transparency of the work of the Forum, and termination of the Forum. Position of the Stakeholders’ Forum in the project setup is presented at the *Figure 6*.

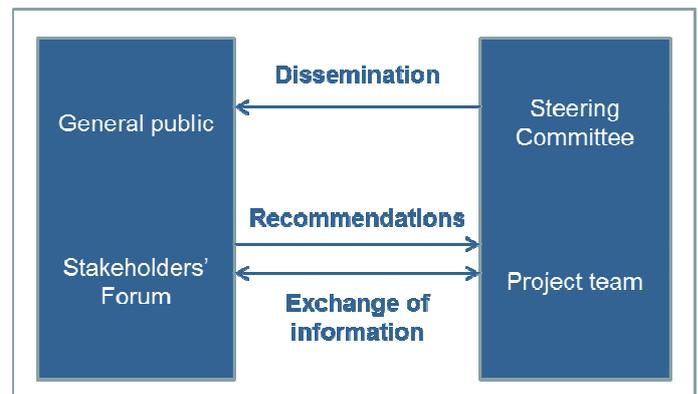


Figure 6: Position of the Stakeholders’ Forum in the project’s setup

The Stakeholders’ Forum is performing the following tasks:

- Ensure transparency during the project implementation;
- Exchange of information related to the project;
- Providing independent and professional inputs and guidance for the project;
- Discussion and provision of recommendations related to the project.



Participants of the Stakeholders' Forum are, among others: International Commission for the Protection of the Danube River (ICPDR), Institute for Nature Protection of Vojvodina, Ship Masters Association of Serbia, World Wildlife Fund (WWF), Aqua et Archaeologia, as well as 4 Serbian NGOs from environmental and competitiveness field delegated from the SEKO (Serbian mechanism for cooperation with non-governmental organizations). Forum meetings are regularly attended by the Delegation of the EU to the Republic of Serbia, Serbian ministries in charge of transport, environmental and nature protection, and water management.

5 WORK OF THE STAKEHOLDERS' FORUM IN SERBIA

The Stakeholders' Forum is a multidisciplinary body in which different interests are being represented: navigation, environmental and nature protection, industry, and archaeology. A number of observers (which are all welcomed) are taking part at the Forum meetings, including Delegation of the European Union to the Republic of Serbia, relevant Serbian ministries and other governmental institutions interested in the project, international river commissions, waterway administrations from other Danube countries, as well as NGOs which are not members of the Forum.



Figure 7: Stakeholders' Forum meeting no. 4

Having in mind the wider importance of the work of the Forum, all documents are being prepared and distributed in both Serbian and English language. All documents from the Forum meetings are available to the general public, at the web site of Plovput (<http://www.plovput.rs/forum-zainteresovanih-strana>), with no restrictions, ensuring direct insight for all stakeholders of the project and guaranteeing the transparency of the planning process.

The total of nine meetings of the Forum has been organized from June 2012 until May 2013. All Forum documents, including agenda, list of participants, presentations, animations, etc. are instantly available to the general public, in Serbian and English language, at the Plovput's web site, section Stakeholders' Forum. From June 2012 until July 2013, the total number of 31.874 hits to the Plovput web site, section Stakeholders' Forum has been recorded, giving the average monthly number of 2.276.



Figure 8: Stakeholders' Forum meeting no. 6

The first milestone in the work of the Forum has been achieved at the fourth meeting held in September 2012, when alternative options from the phase of hydrodynamic modeling have been selected as the best and taken to the phase of morphological modeling. This decision has been adopted by all members of the Forum.

Thanks to the results of the morphological modeling, which have been discussed at the Stakeholders' Forum meetings 5-9, some of the options from the hydrodynamic modeling phase has been changed from structural to non-structural interventions. The final solutions for 6 critical sectors have been unanimously adopted by Stakeholders' Forum members at the Forum meeting number 9, held in May 2013. This enabled continuation towards the next phase of the project and preparation of detailed designs.

The average number of participants at the Stakeholders' Forum meetings is 20, including members and observers of the Stakeholders' Forum and members of the project team.

6 EVALUATION OF THE WORK OF THE STAKEHOLDERS' FORUM IN SERBIA

Work of the Stakeholders' Forum have been regularly monitored and evaluated by the participants of the Forum, both members and observers. Three rounds of anonymous evaluation



have been performed in regular intervals, on the third (August 2012), sixth (December 2012), and ninth (May 2013) meeting of the Stakeholders' Forum.

Five parameters have been monitored during the work of the Forum: fulfilling obligations from the General rules, work of the chair person, quality and availability of information, level of active participation, and representativeness of relevant stakeholders. Grades are in the range 1-5, where 1 is the lowest/worst and 5 is the highest/best grade.

All five parameters have been constantly evaluated with high grades on all three occasions. Results of evaluation are presented in the *Figure 9*.

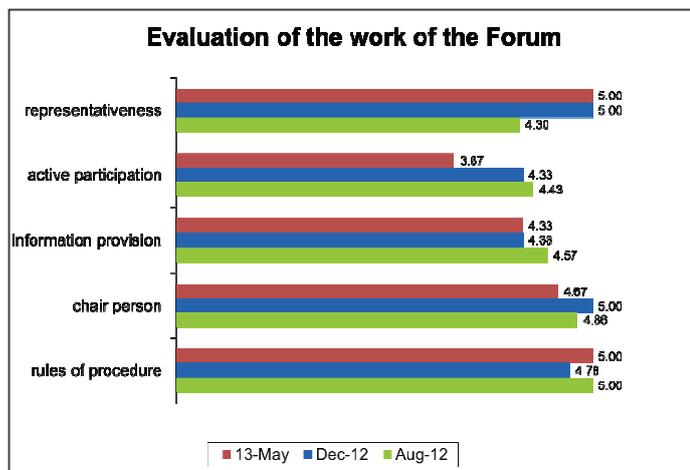


Figure 9: Evaluation of the work of the Stakeholders' Forum

The following conclusions from the evaluation of the work of the Forum can be derived:

- Rules of procedure are being applied and followed by participants of the Forum and the project team;
- Moderation performance of the chair person, who is at the same time the project manager in Plovput, are constantly evaluated with (surprisingly) high grades;
- Perception of the level of information provision from the project team to stakeholders is slightly decreasing, but is still evaluated with high grades;
- Level of active participation of Forum members has a dropping tendency, and is the only parameter evaluated with the average grade lower than 4;
- All relevant fields of interests for the current project are represented in the Stakeholders' Forum.

Results of the evaluation of the work of the Forum have been used by the Directorate for Inland Waterways Plovput, as a project developer, in order to improve performance of the established

framework for public participation and provision of information of interest to all relevant stakeholders. Results of the evaluation are also part of the project dissemination report, published in August 2013.

7 CONCLUSIONS

The following conclusions can be derived from this case study:

- This is one way how public participation and early consultation process with stakeholders could be established. It is not clear if this approach is universally applicable for other projects;
- River training works are type of projects stipulated in relevant legislation as the one which needs a special attention in terms of public participation;
- Enabling public participation and performing early consultation process with all relevant stakeholders can be a contributing factor to the successful project implementation;
- Acknowledging and understanding the different interests of different stakeholders is of a crucial importance for the implementation of complex multidisciplinary waterway projects;
- Public is interested in the development of the project, as the average number of hits per month to the Stakeholders' Forum web site of 2.276 is relatively high;
- Anonymous evaluation practice is a good tool for identification of fields of work that deserve special attention and improvements in the future.

Directorate for Inland Waterways Plovput wishes to thank once again to all participants of the Stakeholders' Forum for their contribution to the successful implementation of the project.

REFERENCES

- Dietz, T., Stern, P. C., 2008, Public Participation in Environmental Assessment and Decision Making, The National Academies Press, Washington
- Group of authors, *Preparation of Documentation for River Training and Dredging Works on Selected Sectors Along the Danube River - Phase 1 Pre-feasibility Study*, Final report, 2012, Witteveen – Bos, DHI, Energoprojekt, EuropeAid/129691/C/SER/RS, Tender No: 10SER01/14/11
- Group of authors, *Preparation of Documentation for River Training and Dredging Works on Selected Sectors Along the Danube River - Phase 2 Feasibility Study*, Final report, 2013, Witteveen – Bos, DHI, Energoprojekt, EuropeAid/129691/C/SER/RS, Tender No: 10SER01/14/11



Joint Statement on Guiding Principles on Inland Navigation and Environmental Protection in the Danube River Basin, 2010, ICPDR

EU Guidance document on Inland Waterway Transport and Natura 2000, 2012, European Commission