Hydraulic and morphological modelling of the common SRB-HRV stretch of the Danube River

Republic of Serbia

Ministry of Construction, Transport and Infrastructure

Directorate for Inland Waterways

Geographical area to be covered: mutual stretch of the Danube River between Serbia and Croatia, from the rkm 1433 to rkm 1295.5

Target groups

- Ministry of Construction, Transport and Infrastructure of Republic of Serbia;
- Ministry of Sea, Transport and Infrastructure of Republic of Croatia;
- The Directorate for Inland Waterways (Plovput) under the MoCTI;
- Agency for Inland waterways under the MSTI;
- Harbour Masters Offices;
- Shipping companies involved in navigation process
- Danube Commission;
- All relevant stakeholders to be invited to participate at the Stakeholders' Forum

No previous modelling of the whole sector

Component 1 - 1D hydraulic model

- 1D steady flow hydraulic model for the whole common Croatian and Serbian stretch of Danube River for the selected characteristic hydrological occurrences agreed and approved by the Stakeholder’s Forum.

- The model shall serve in redefinition of navigational bottlenecks at mutual sector and prioritization of identified bottlenecks in order to perform 2D hydrodynamic and morphological modelling of selected bottlenecks.

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Steps in elaborating 1D model:

- Gathering all the input data – will be provided by the CRO partner
- Configuration of the 1D model
- Calibration of the 1D model
- Evaluation and monitoring of the results.

Component 2 - Redefined and prioritized navigational bottlenecks

- To analyse existing the Catalogue of bottlenecks using output of the 1D modelling

- Output:

Updated bottleneck Catalogue at mutual stretch of the Danube, approved list of bottlenecks for which the alternative solutions will be proposed, as a part of the integrated study on alternative solutions

Component 3 - Defined parameters for the multi-criteria analysis

- The multi-criteria analysis relies on inputs from experts and stakeholders. These inputs shall be summarised to arrive at a collective decision, or choice, regarding the selection of a weighted set
- Output:

Selected and agreed parameters for the multi-criteria analysis

Component 4 - Defined parameters for the multi-criteria analysis

- Defined alternative solutions for prioritized sectors and hydrodynamic and morphological modelling.
- All proposed alternatives shall be discussed within the Stakeholders' Forum.
- Outputs:

The Consultant shall thoroughly document the two-dimensional hydraulic modelling outputs in a comprehensive report, as a part of the integrated study on alternative solutions.

Component 5 - Developed integrated study on alternative solutions

Integrated study on alternative solutions shall contain:

- results of 1D hydraulic modelling,
- defined critical sectors for navigation,
- prioritized critical sectors for navigation,
- parameters of the mutually agreed multi-criteria analysis,
- alternative solutions,
- results of modelling of alternative solutions,
- application of the multi-criteria analysis,
- elaboration of favorable selected solutions,
- addressing the climate change issue and including all activities of the Stakeholders' Forum in all phases of the process.