Towards Practical Guidance for Sustainable Sediment Management using the Sava River as a showcase

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Introduction: The Sava River Basin, a major sub-basin of the Danube River in South-East Europe, is shared by five countries and hosts a population of 8.5 million. To promote and address the sustainable sediment management (SSM) solutions, a project *"Towards Practical Guidance for Sustainable Sediment Management using the Sava River as a showcase"* has been launched upon the joint initiative of UNESCO Venice Office, ISI, SedNet and ISRBC. The purpose of the project is to bring together the state-of-the-art in scientific and practical knowledge on SSM and to make that knowledge available through a practical training course. The main objective of the project is to develop and validate a practical guidance on how to achieve a SM Plan on the river-basin scale.

Methods: Within the implementation of the Framework Agreement on the Sava River Basin (FASRB), the Sava countries drafted the *"Protocol on Sediment Management to the FASRB"*, to provide a legal basis for future cooperation of the countries on the development of the Sediment Management Plan for the Sava River Basin. The Protocol highlights comparable guiding principles to SSM as those endorsed by lSI and SedNet. These shared principles set an excellent condition for cooperation among the Sava countries that implement the Protocol, and, for lSI and SedNet to support that implementation through the project *"Towards Practical Guidance for Sustainable Sediment Management using the Sava River as a Showcase"*.
The overall scope of the SM Plan is to cover various sediment management related issues such as: (a) sediment balance throughout the river system, (b) sediment monitoring, (c) evaluation of sediment quality and quantity, (d) measures to prevent impacts and pollution of water or sediment resulting from dredging, (e) measures to control erosion, torrents and other sediment processes, (f) measures to ensure and maintain integrity of water regime, (g) measures to provide, ensure and maintain conditions for safe navigation, (h) measures to protect wetlands areas and retention spaces, (i) measures to control reservoir sedimentation, (j)designated areas for capital dredging, (k) guidance for sediment disposal, treatment and use, and (l) institutional arrangements for implementation of the SM Plan.

Results: The first part of the project includes the development and execution of the first SSM course, as well as the drafting of the corresponding guidance document, i.e. the first three elements of a SM Plan. A draft *"Guidance on Sustainable Sediment Management - Part I"* has been developed and the corresponding action *"Estimation of Sediment Balance for the Sava River (BALSES)"* was launched. The BALSES project aims in applying the Guidance Part I in the Sava Basin practice. It will analyse the sediment balance for the Sava River considering the input from the main tributaries and the temporal variability of the sediment data at the mean annual scale. The identified monitoring and sampling gaps, and recognized data uncertainties will lead to the proposal of effective sediment monitoring system and recommendation of joint activities towards its establishment.

Fig. 1: Participants of the first part of the SSM course

The second part of the project will address measures, dredging, sediment disposal, treatment and use, as well as institutional arrangements, and then again apply the lessons learned in the Sava practice to facilitate further development of the Sava SM Plan.

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