



## **Status quo of the Danube basin countries' flood and ice forecasting systems and methodologies**

Mojca Šraj (1), Sašo Petan (2), Mira Kobold (2), Nejc Bezak (1), and Mitja Brilly (1)

(1) University of Ljubljana, Faculty of Civil and Geodetic Engineering, Ljubljana, Slovenia (mojca.sraj@fgg.uni-lj.si), (2) Slovenian Environment Agency, Ljubljana, Slovenia

Frequency of floods in the Danube River basin increased in the last decades (e.g. major floods in 2002, 2005, 2006, 2009, 2010, 2013, and 2014), urging the need for a more effective and harmonized regional and cross-border cooperation in the field of flood and ice forecasting. Reliable and comprehensive hydrologic data are the basis of flood forecasting in any country of the Danube river basin. None of the flood risk mitigation measures serves better the protection of human lives and the social estate than enhancing the preparation time to avoid catastrophes that could have been caused by unpredicted floods. The most cost-effective non-structural tangible solution, which highly reflects the solidarity principle, is the improvement of forecasting capabilities on basin-wide scale.

The need for enhanced cooperation in flood protection was officially recognized in various international and interregional policy documents. DAREFFORT project was initiated under the Interreg Danube Transnational Programme to identify the state of the art of flood and ice forecasting techniques and raise awareness among the countries about the basic problems of flood and ice forecasting (e.g. the lack of a unified data exchange at the catchment level) and to help implement the Danube Flood Risk Management Plan in line with the Flood Risk Directive. The project will deliver a complete analysis of the countries' flood and ice forecasting systems in order to identify and reveal the needs of the individual countries in terms of data requirements. The main aim of this project is to give a comprehensive overview about the complex national flood and ice forecasting systems and to eliminate the shortcomings of the existing forecasting practices. Furthermore, one of the objectives of the project is to strengthen inter-institutional collaboration among the Danube countries towards better flood and ice forecasting in the region. The Danube River basin is the most international river basin in the world with many large tributaries having catchments in 14 countries. Each Danube country has its own responsible hydrometeorological institute for flood and ice forecasting at the national level with varying needs for data and output formats. The forecasting models and input/output data file formats show a great diversity hence the data exchange protocols did not always follow the latest, more advanced technologies. The gathered information about national flood and ice forecasting practices and the acquired knowledge through the review process will be joined into an international policy proposal for a harmonized data exchange protocol, including the sufficient quantity, quality, and format of the data exchange.