

Integrated flood risk management for Danube The impact of the reconnection of the canals in the Fetesti – Stelnica area

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Abstract

As part of the second cycle of the implementation EU Flood Directive in Romania, a Flood Risk Management Plan for the Danube has been developed, including the assessment of various potential alternatives. A select list of alternatives was defined in collaboration with various national and regional agencies, for which flood protection, environmental conditions, agriculture, social welfare and cultural habitats were all considered. The assessment of two of these options (channel reconnections at Fetesti and Bordusani) is here presented. As part of this assessment, a quasi-2D hydraulic model was developed in which all sections of the Danube from Calarași upstream to Telcua in the delta are included. This allows the full extent of the measures' impacts to be assessed in terms of discharges, water levels and potential dike overtopping during extreme events. The results show that the channels can have a positive impact on expected water levels, and would significantly reduce the amount of grey infrastructure (such as dike height increases) needed in the region. As well as this flood risk reduction, the measures would also have environmental and recreational benefits. It is hoped that further assessment in relation to low-flow impacts and land ownership can help turn these plans into reality, and that they can contribute to a larger vision on the Danube where reconnected channels can reduce flood risk along large sections of the Romanian Danube while providing environmental benefits.

This article is developed based on the Danube flood risk management plan that was developed during implementation of the second cycle of the EU FD by a JBA (UK/Romania) led consortium including HKV (the Netherlands), DHI (Denmark/Romania) and Aquaproject (Romania).

Keywords

flood risk, modelling, programme of measures, channel reconnection

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