



Adaptation to floods in future climate: a practical approach

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In this study some aspects of the application of the 1D hydraulic model are discussed with a focus on its suitability for flood adaptation under future climate conditions. The Biała Tarnowska catchment is used as a case study. A 1D hydraulic model is developed for the evaluation of inundation extent and risk maps in future climatic conditions. We analyse the following flood indices: (i) extent of inundation area; (ii) depth of water on flooded land; (iii) the flood wave duration; (iv) the volume of a flood wave over the threshold value. In this study we derive a model cross-section geometry following the results of primary research based on a 500-year flood inundation extent. We compare two methods of localisation of cross-sections from the point of view of their suitability to the derivation of the most precise inundation outlines. The aim is to specify embankment heights along the river channel that would protect the river valley in the most vulnerable locations under future climatic conditions. We present an experimental design for scenario analysis studies and uncertainty reduction options for future climate projections obtained from the EUROCORDEX project.

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