Geophysical Research Abstracts
Vol. 18, EGU2016-2125, 2016
EGU General Assembly 2016

Alternating flood and drought hazards in the Drava Plain, Hungary

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Our research project covers the assessment of archive data and monitoring present-day water availability in the floodplain of the Hungarian Drava River. Historically flood hazard has been prevalent in the area. Recently, however, flood and drought hazards occur with equal frequency. Potential floodwater storage is defined from the analyses of soil conditions (grain size, porosity, water conductivity etc.) and GIS-based volumetric estimations of storage capacities in oxbows (including communication with groundwater). With the remarkable rate of river channel incision (2.4 m per century) and predictable climate change trends (increased annual mean temperature and decreased summer precipitation), the growing frequency and intensification of drought hazard is expected. For the assessment of drought hazard the impacts of hydrometeorological events, groundwater table dynamics and capillary rise are modelled, the water demands of natural vegetation and agricultural crops are studied. The project is closely linked to the ongoing Old Drava Programme, a comprehensive government project, which envisions floodplain rehabilitation through major transformations in water governance and land use of the region, and has numerous implications for regional development.
Authors are grateful for financial support from the Hungarian National Scientific Research Fund (OTKA, contacts nos K 104552 and K 108755) as well as from the Visegrad Fund (31210058). The contribution is dedicated to the 650th anniversary of the foundation of the University of Pécs, Hungary.