



## **Synergies between Danube Floodplain revitalization, flood risk mapping and spatial planning**

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The Danube River must be considered more than a subject of hydraulics. Together with its major riverbed and flooded meadow, represents a very complex ecosystem that provides habitat for a very rich flora and fauna, and also a support for the socio-economical activities. During time, the ecological balance of Danube River has suffered alteration processes because of continuously development of human society. In the alteration process of the Danube have been destroyed dominating natural systems and created instead industrial structures with economical purpose such as navigation, hydro-energy, agriculture, harbors that are damaging the Danube River by losing the floodplains and natural morphological structures, determining the Danube Floodplain to struggle with increasing flood risks and actual floods in the last few years. Because the Danube was recently channelized and enclosed by dikes, there is hardly room for the reduction of peak flow during rainy periods or for the development of nature along the river. Due to climate change and large-scale deforestation, these peak flows occur not only more frequently, but they also carry a greater volume of water over a shorter time, as seen during the summers of 2004 and 2005 and spring 2006, 2010 when a large part of the region flooded and required large-scale evacuations. The catastrophic flood events in the Danube Basin in particular reveal the vulnerability of our society against extreme natural events. With the increase of population and industrialization, the settling areas and land use activities spread in floodplain areas seeming protected or hardly affected. Hence, the Romanian Danube Floodplain has been the subject of three major research projects: “Ecological and economical restoration of Lower Danube Floodplain - Romanian Sector”, “Danube River revitalization” within SEE project ‘Danube River Network of Protected Areas’ and “Beneficiaries and flood risk assessment in Danube Floodplain”. The synergic objective of the projects is to create the strategy of implementation the integrated flood management concept with floodplain revitalization and sustainable development in Lower Danube Floodplain requiring a consolidated spatial planning and flood risk maps elaboration.