Assessment of ecosystems services as a part of water and land management in the Tisza River Basin

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Providing ecosystem services – the benefits people obtain from ecosystems – is strongly dependent on the capacity of natural processes and ecosystem functioning. The inclusion of ecosystem services in spatial and policy planning is important, since the services are highly influenced by climatic conditions, water management and the institutional context. In Hungary and Romania the required scientific research for the consideration of ecosystem services in spatial planning and in the institutional context is weak. The Tisza River Basin, which is shared by these two countries, is increasingly facing the impacts of floods and droughts. In order to mitigate their effects and to sustain human well-being an integrated approach combining transboundary water and land management and the institutional context is needed. The ecosystem service perspective can provide such an approach..

This symposium aims at discussing the role of ecosystems services and their importance in two cases of the Tisza River Basin by presenting an assessment of ecosystems services in the context of land and water management schemes, policy framework and climate related extremes. The two cases are both pilot areas for new water and land management plans: (1) the Hungarian Bereg Region, where future flood-retention polder plans have been developed under the European Bereg-INTERREG Neighborhood Programme; (2) the Romanian Crişul Negru Basin where the creation of wet areas along the Crişul Negru River has been proposed by the Ministry of Environment. Fourteen ecosystem services are investigated for the following land cover types: arable land, grassland, forest, orchard, wetland, water body and urban environment. The analysis is done for the plot, landscape and watershed spatial scales.

In this symposium a specific framework will be presented focusing on the performance of ecosystem services and the factors that change it. They are: state of ecosystems, weather extremes, recognition, potential, policy measures and water management plans. Firstly, the link between ecosystems services and water and land management will be discussed. Secondly, the expression of ecosystem services in relevant European and national policy acts will be pointed out. The approach follows the similarities and differences between the two countries. Our contribution to the symposium will highlight the importance of ecosystem services and their consideration, both related to the policy context, weather extremes and water management plans in a transboundary context. The discussion will focus on how an integrated ecosystem services assessment can contribute to decision making and planning.