

DR. CONSTANZE LEEMHUIS**Wetland hydrology at multiple scales**

Keywords: groundwater/surface water dynamics, wetland-catchment interactions, hydrological modelling, water-related ecosystem services, upscaling, multi-criteria analysis and DPSIR

A wetland is defined by the importance of hydrologic processes for its formation and the function of the wetland within the hydrologic balance of a catchment. The understanding of the functioning of a wetland lies in the water budget, which expresses the movement of water into, out of the wetland and the storage of water within it. In East Africa still a variety of hydrological processes and mechanisms occurring within many wetlands under site/ -and use specific conditions are not fully understood especially due to a lack of time series information related to water fluxes and water balance. The set-up of two experimental hydrological test sites with a dense hydrological monitoring network for our project focal wetland type floodplain (Ifakara, Tanzania) and inland valley (Namulonge, Uganda) provide a basis for the understanding and modelling of small-scale hydrological processes and water related ecosystem services in wetlands und different kind of management options. On the greater scale the analysis of catchment-wetland interactions is required to determine altered wetland water inflows based on local climate variability and land use changes of the upstream catchment and furthermore the impact of wetland use on downstream riparian. Based on knowledge and data at wetland and catchment-wetland interactions we will develop a methodology to describe hydrological properties of the focal wetland types at the national scale to identify wetlands that can be sustainably used for small-scale agriculture without deteriorating other ecosystem services. Applying an interdisciplinary approach we will develop a multi-criteria analysis linking the DPSIR concept and ecosystem services in order to quantify current impacts of wetland use depending on drivers and pressures.



Contact data:

Dr. Constanze Leemhuis

Department of Geography
Meckenheimer Allee 166
53115 Bonn
Germany

leemhuis@uni-bonn.de

www.wetlands-africa.de



Cluster	A, B, D
Work Package	A5e,f; B2a, D4
Countries of work	Uganda, Tanzania, Kenya and Rwanda
Institute	Department of Geography
University/Organisation	Bonn University