

PhD projects at the Hydrological Research Group

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Regional scale wetland-catchment interactions in East Africa

Keywords: Water balance, hydrological modeling, East Africa, climate change, land use change, wetland-catchment interaction, SWAT model

The PhD research project focuses on hydrological interactions between wetlands in East Africa and their surrounding catchments. It is embedded in the GlobE research project “Wetlands in East Africa - reconciling future food production with environmental protection”.

To investigate hydrological catchment-wetland interactions the semi-distributed SWAT (Soil and Water Assessment Tool) model will be applied to two different catchments in East Africa. The Kilombero floodplain in Tanzania with about 40.240km² and the Namulonge catchment in Uganda which is a small inland valley of about 33km².

Future scenarios concerning climate change, land use change and diverse management options will be developed within the project and applied to both wetlands to assess their influence on their surrounding catchments under changing conditions. The emphasis in regard to the scenarios will be placed on upstream-downstream relationships between the wetlands and their downstream riparian. The results of the scenario simulations can be used to support management decisions as they deliver approximations of feedbacks between management practices and water quantity and quality under different conditions.

Furthermore the regional scale results will serve as boundary conditions for smaller scale approaches within the project.



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Work Package	A5 Matter fluxes
Countries of work	Uganda, Tanzania
1 st Supervisor	Prof. Dr. Bernd Diekkrüger
2 nd Supervisor	
Subject	Geography
Faculty	Faculty of mathematics and natural science
University	Bonn
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