

## M.Sc. Thesis at the Hydrology Research Group

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# Survey and analysis of the soil moisture dynamic of a wetland in Tanzania

**Keywords:** Africa, Tanzania, Kilombero Valley, Ifakara, GlobE Project, wetlands, hydrology, hydrological modelling, soil moisture dynamics, Hydrus-1D

The Master thesis analyses the soil moisture dynamics of a defined wetland site, located in the Kilombero Valley in Tanzania close to the city of Ifakara. The work is embedded within the GlobE: Wetlands in East Africa Project looking at sustainable use of wetlands and their potential contribution to food security.

The seasonal simulation of soil moisture dynamics and groundwater table fluctuation is an important parameter for crop growth modelling. One of the main targets of this work is to understand and simulate wetting and drying processes of the soil at the transition period of the dry and the wet season.

FDR Sensors measuring soil water content and piezometers for the monitoring of the shallow groundwater fluctuation will be installed in January 2015. The monitoring period will cover three months until the peak of the rainy season mid of April. For the simulation of the seasonal soil water dynamics the hydrological model Hydrus-1 D will be applied to selected soil profiles of the wetland site.

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Work Package	WP A5 Matter fluxes
Countries of work	Tanzania
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University	University of Applied Science Magdeburg University Bonn
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