

Junior Fellowship for Dr. Yazidhi Bamutaze: Land use and climate change impact on sediment and nutrient dynamics in Rwizi Catchment, Lake Victoria Basin

Initiative: Wissen für morgen – Kooperative Forschungsvorhaben im subsaharischen Afrika (beendet)

Ausschreibung: Postdoctoral Fellowships on Livelihood Management, Reforms and Processes of Structural Change

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Land use and climate change are projected to adversely impact on the poor populations in the Lake Victoria Basin (LVB) whose livelihoods are strongly dependent on exploitation of ecosystem services. Land use and climate change, coupled with persistent degradation epitomize complex interactions which are likely to adversely impact the entire suite of interdependent ecosystem services and the biogeochemistry intensifying poverty through nutrient depletion and reduced yields in the climatically sensitive rain-fed agricultural systems. Despite these threats, the contexts and dynamics of land use and climate change in the LVB are poorly understood neither are their impacts on sediment and nutrient fluxes. The study will among others address the following scientific questions. What ecological and socioeconomic conditions drive land use trajectories? How sensitive is Rwizi catchment to historical climatic stressors and future climatic conditions? How do changes in land use and climate impact on sediment and nutrient patterns under current and future conditions? The study will be conducted in Rwizi catchment in the LVB. The project will employ a compendium of methods including; experimentation using runoff plots, GIS-based SWAT simulations, spatial land use change modelling, household surveys and focussed group discussions to elicit land use and climate trajectories, the associated sediment and nutrient fluxes, as well socio-ecological conditions underpinning changes in the study. Apart from the scientific outputs, the project is envisaged to provide spatially explicit information and knowledge pertinent to crafting and improving interventions and policy options for sustainable adaptation and livelihoods. The project will be implemented primarily with collaboration and mentorship from University of Bonn, Free University of Berlin and University of Cape Town.

Projektbeteiligte

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**Dynamics of surface runoff and soil loss from a toposequence under varied land use practices in
Rwizi catchment, Lake Victoria Basin**