

UNIVERSITY OF OLDENBURG

CLIM-A-NET - THE NORTH-SOUTH-NETWORK ON CLIMATE PROOFING OF VULNERABLE REGIONS

Proposed Title: Hydrological Sensitivity of the Mkomazi Basin (Tanzania) to Climate Change

ABSTRACT

This study will develop the distributed hydrological Climate Impact Changes Model for Mkomazi Catchment in Pangani River Basin. The model will effectively describe the hydrology processes of the basin and simulate the possible future hydrologic features due to climate changes. The study will involve literature review and collection of data including field visit.

The Model will assume that the topography controls the water flow within the basin. The overland flow routing will be modeled assuming that the surface flow may occur because of infiltration excess of the top soil layer, or because of saturation excess of bottom layer. The inputs to the model will be generated spatial variables data. The model will be calibrated using the observed data and the literatures.

The future scenario will be developed based on the fact that the climate change may be due to natural internal processes, external forcing and due to anthropogenic effects. The Global Circulation Model will be used to generate at least two possible future climate scenarios using statistical downscaling techniques spanning 2010-2099. The average seasonal changes for each time slice will be stretched by assigning the values to each year within the represented 30 year period.