

## **Determination of groundwater vulnerability to climate variability and contamination in the Central Kenya Rift (Dr. Lydia Olaka)**

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

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Overexploitation and climate variability are a threat to potable water resources. Within the central Kenya rift (CKR), the groundwater and Lake Naivasha are thought to have an effective connection that keeps this surficially closed lake fresh. Increasing demand for fresh water for municipal, industrial and agricultural supplies has lead to decline in water budgets and climate change is expected to exacerbate the situation. The Water Resources Management Authority of Kenya lists this aquifer as 'strategic' to supplying significant amounts of water with no available alternatives. Fluctuations of groundwater in space at sub annual scales are not yet established. To improve mitigation efforts a sound knowledge of sub annual recharge and storage is needed. We propose to develop a fully coupled soil water-groundwater-surface water model for the Naivasha basin and simulate the behaviour of the aquifers under different climatic scenarios. This three year study (2011 - 2014) will be carried out in collaboration with various partners; from the industry, water resource management and Academic research. The expected results will enhance sound water allocation measures and enable proper calibration of hydrological budget models.

### **Projektbeteiligte**

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