

Towards groundwater security in coastal East Africa: initiating a regional research network and integrated hydrogeologic, climatic & socio-economic observatories in coastal aquifers of the Comoros Islands, Kenya and Tanzania

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ABSTRACT

African coastal regions are expected to experience the highest rates of population growth in coming decades. Fresh groundwater resources in the coastal zone of East Africa (EA) are highly vulnerable to seawater intrusion. Increasing water demand is leading to unsustainable and ill-planned well drilling and abstraction. Wells supplying domestic, industrial and agricultural needs are or have become, in many areas, too saline for use. Climate change, including weather changes and sea level rise, is expected to exacerbate this problem. The multiplicity of physical, demographic and socio-economic driving factors makes this a very challenging issue for management. At present the state and probable evolution of coastal aquifers in EA are not well documented. The UPGro project 'Towards groundwater security in coastal East Africa' brings together teams from Kenya, Tanzania, Comoros Islands and Europe to address this knowledge gap. An integrative multidisciplinary approach, combining the expertise of hydrogeologists, hydrologists and social scientists, is investigating selected sites along the coastal zone in each country. Hydrogeologic observatories have been established in different geologic and climatic settings representative of the coastal EA region, where focussed research will identify the current status of groundwater and identify future threats based on projected demographic and climate change scenarios. Researchers are also engaging with end users as well as local community and stakeholder groups in each area in order to understanding the issues most affecting the communities and searching sustainable strategies for addressing these.

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