

TOWARDS GROUNDWATER SECURITY IN COASTAL EAST AFRICA

UPGro Programme 2013-2014 - Unlocking the Potential for Groundwater for the Poor

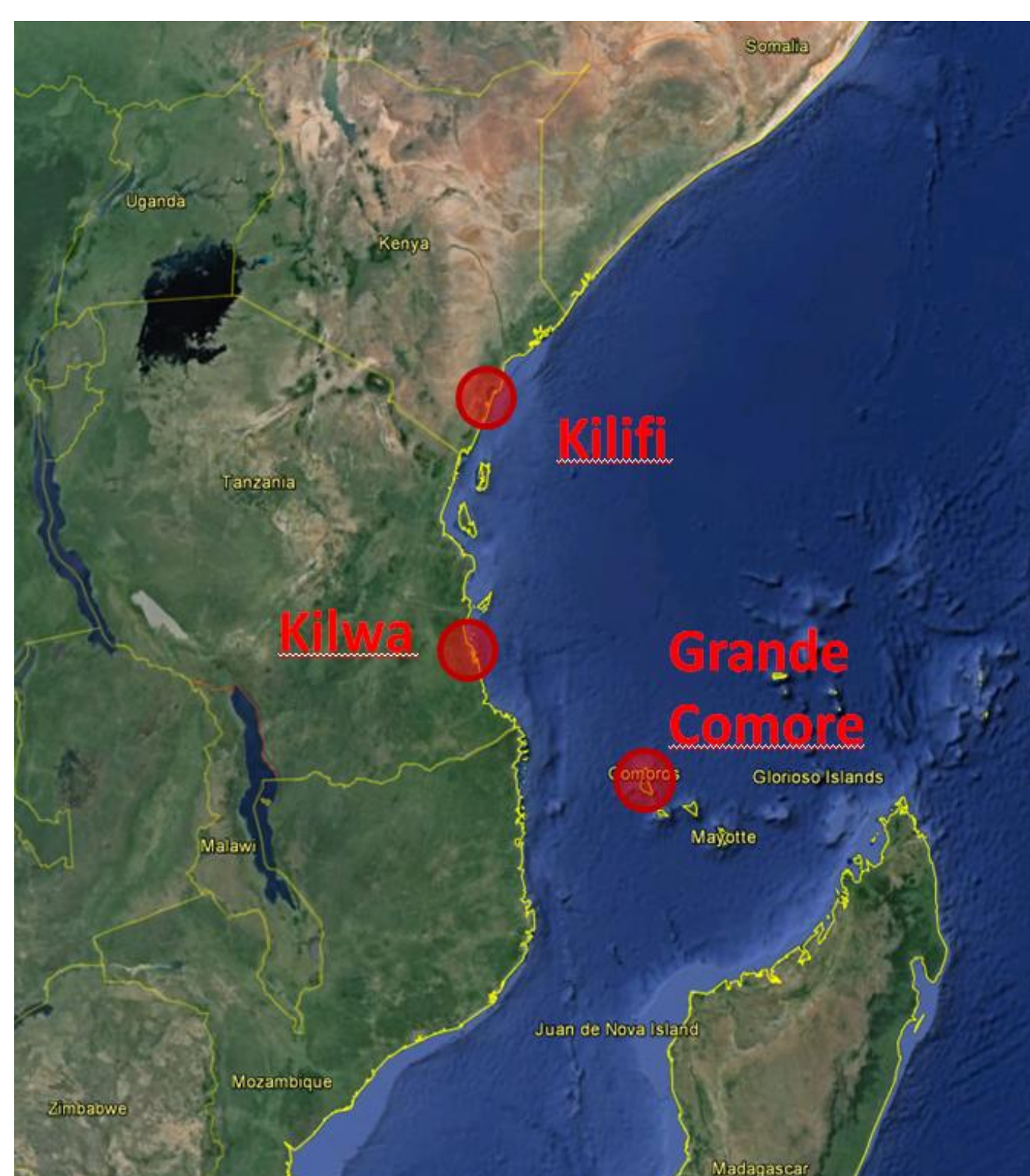
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Introduction

Groundwater resources in the coastal zone of East Africa are at risk due to;

- Increased demand linked to rapid population growth resulting in unsustainable and ill-planned well drilling and abstraction
- Sea water intrusion
- Climate change which is likely to cause rising sea levels
- Low recharge rates due to altered precipitation and temperature



Objectives

- To develop coastal groundwater monitoring networks
- To establish the current status of groundwater resources in the coastal zone of the East African
- To identify issues with past practices and to work towards more effective and sustainable approaches.

Figure 1: The study area and field observatories in: (1) Kilifi, Kenya; (2) Kilwa, Tanzania and (3) Grande Comore, Comoros Islands.



Figure 2: Pumping station in Oichili, Grande Comore

Figure 3: Pumping station in Kilwa, Tanzania

Methodology

Work Package 1

- Assess the current hydrogeological conditions and the aquifer vulnerability to saline water intrusion, aquifer properties, groundwater flow and quality and recharge and abstraction rates

Work Package 2

- Hydrological monitoring and modeling of the impacts of environmental change (precipitation, evapotranspiration, land use recharge)

Work Package 3

- Assess the socio-cultural-economic and environmental issues affecting ground water resources management

Poster presented at the **International Network of Women Scientists and Engineers (INWES) Conference**
19th-21st November 2013, Kenya School of Monetary Studies, Nairobi, Kenya

Expected outputs

- Develop regional (GIS) databases on groundwater
- Integrate collected data/literature in an online groundwater grey literature archive
- Develop regional expertise and support groundwater regional network
- Scientific publications and dissemination at high-ranking international conferences and journals.
- Establish a network capable of attracting future funding from UPGro for a longer term programme,



Figure 4 : Borehole instrumentation in Kilifi (left) and Grande Comore (right)



Figure 5: Weather station installation in Kilwa

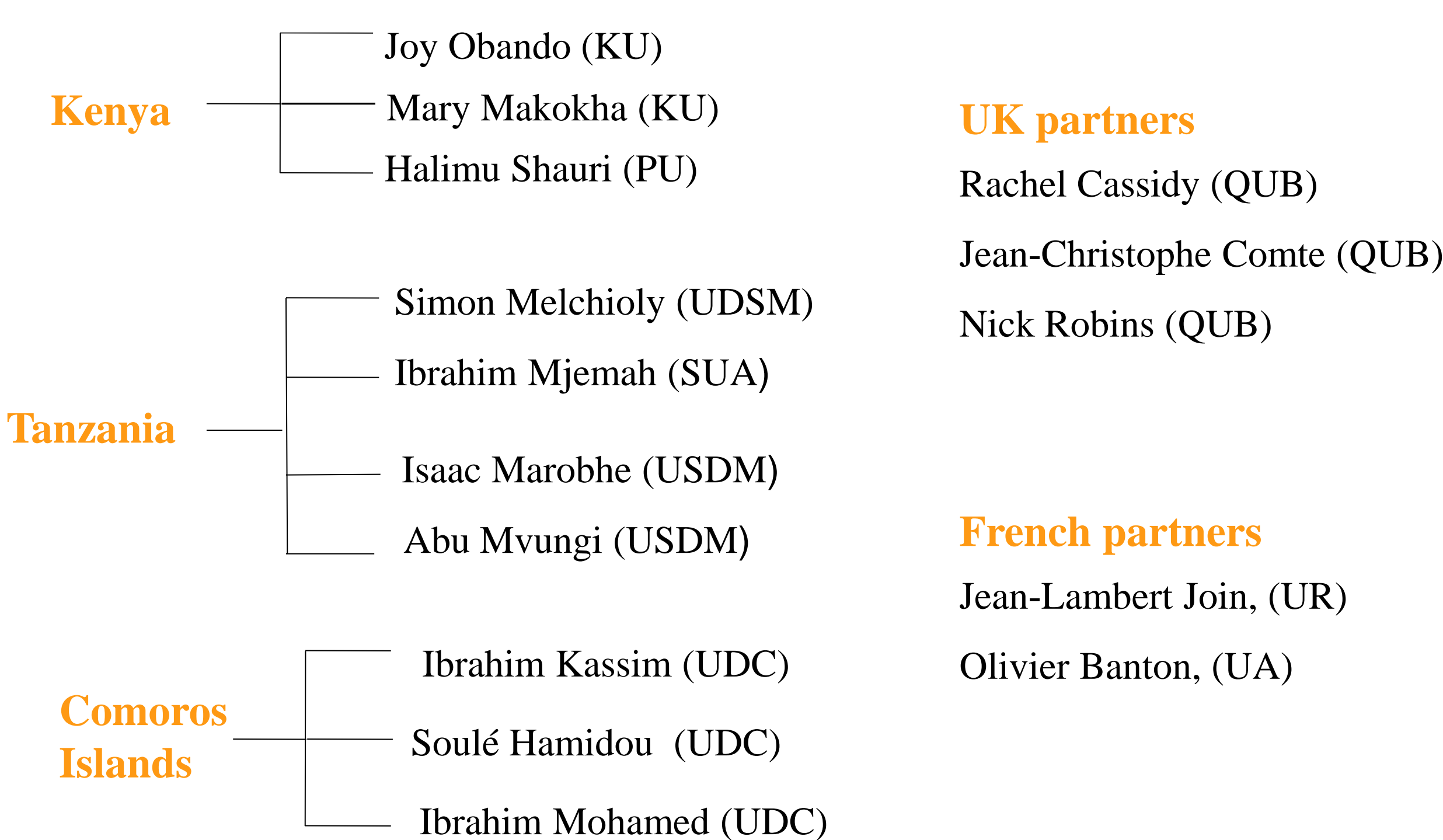
Project Partner Institutions

- Kenyatta University (KU)
- Queen's University Belfast (UK)
- Pwani University (PU), Kenya
- Sokoine University of Agriculture (SUA), Tanzania
- University of Dar es Salaam (UDSM), Tanzania
- Université des Comores (UDC), Comoros Islands
- Université d'Avignon (UA), France
- Université de La Reunion (UR), France

Project Management (PIs):

- Joy Obando (KU)
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Research Teams



Project Funders



Further information

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