GGRETA
GOVERNANCE OF GROUNDWATER RESOURCES IN TRANSBOUNDARY AQUIFERS

Online Course on Groundwater Management in African Lake and River Basin Organizations

Schweizerische Eidgenossenschaft
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Swiss Agency for Development and Cooperation SDC

Human Capacity and Expertise in Hydrogeology

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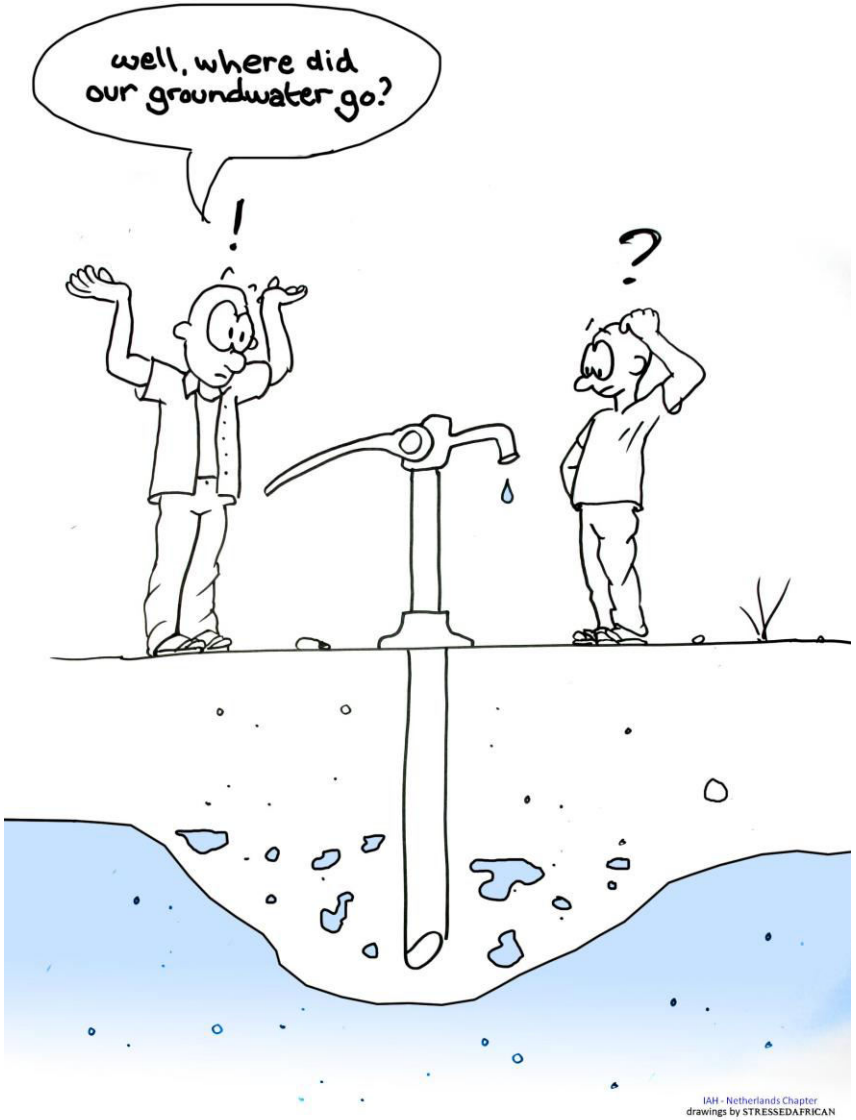
The need for expertise in hydrogeology

Groundwater assessment requires expertise in hydrogeology.

Groundwater specialists are necessary for development of the knowledge base and keeping it up to date

Organisations such as water authorities, WASH agencies, river basin organisations need hydrogeologists to provide support to understand the local groundwater resources, professionally site boreholes and supervise drilling activities and manage groundwater data.



A gap in capacity and expertise

Many professionals involved in groundwater management are not aware of groundwater principles and methods

There is a lack of hydrogeological training and mentoring for those who site, drill, supervise and manage borehole drilling programmes, particularly in low-income countries

In many African countries there is a gap in higher education in groundwater, even when groundwater is the major water resource.

There is also a gap of interdisciplinarity in university programs, with little connections between hydrogeology and other sciences (e.g. geography, water engineering and planning, environmental sciences, social sciences, public health)

Even when hydrogeologists are trained at higher education level, they tend to be hired in other sectors or even in other countries.

How to increase capacity and expertise within the region and retain these groundwater experts?

Short Term

Capacity building activities
Can assist in the short term

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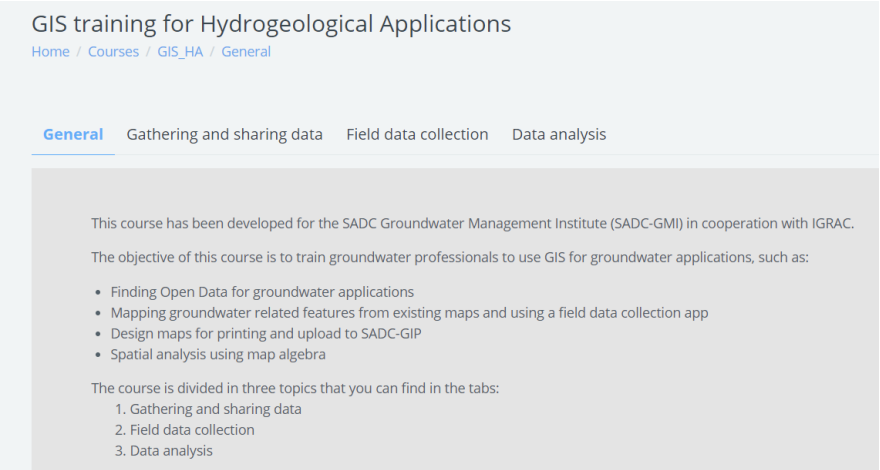
Workshops

Short courses

“training the trainers”, etc.

Vocational training

But not a replacement for technical higher education professional training



GIS training for Hydrogeological Applications

Home / Courses / GIS_HA / General

General | Gathering and sharing data | Field data collection | Data analysis

This course has been developed for the SADC Groundwater Management Institute (SADC-GMI) in cooperation with IGRAC.

The objective of this course is to train groundwater professionals to use GIS for groundwater applications, such as:

- Finding Open Data for groundwater applications
- Mapping groundwater related features from existing maps and using a field data collection app
- Design maps for printing and upload to SADC-GIP
- Spatial analysis using map algebra

The course is divided in three topics that you can find in the tabs:

1. Gathering and sharing data
2. Field data collection
3. Data analysis

https://ocw.un-ihe.org/course/view.php?id=109

Long term

Long term, investment in professional technical training is essential

- Development of education in hydrogeology (e.g. university programs) knock on effect, increasing groundwater research in region
- Water professionals from low-income countries can be offered postgraduate education abroad (e.g., IHE-Delft and GroundwatCh programme)
- Create groundwater related jobs

Capacity within L/RBOs

GW Capacity if often limited with L/RBOs

Hydrogeological work can be outsourced but writing the ToR, supervising the work of the consultant and taking up the outcomes requires expertise in hydrogeology - in L/RBO.

River Basin Organizations (RBOs) have a unique opportunity to fully integrate groundwater and surface water management in an optimal and sustainable manner. Traditionally the integrated management of surface and groundwater has lagged behind in many RBOs for various reasons which include institutional separation of groundwater and surface water management, different knowledge and skill systems required for surface and groundwater management, and the geographic occurrence of Aquifer systems not always coinciding with river basin boundaries.

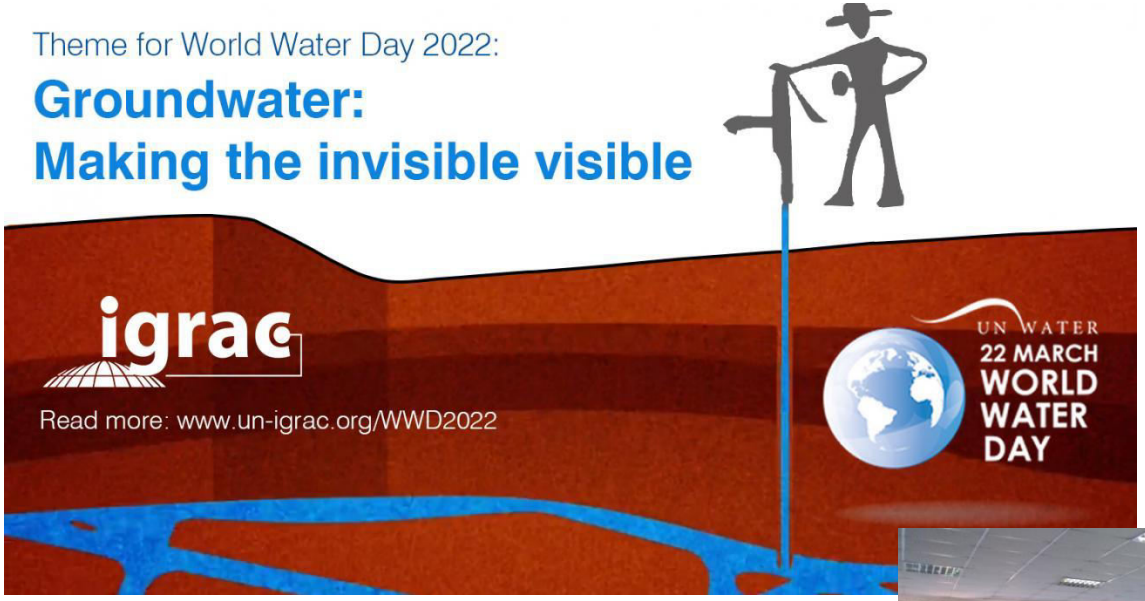
Realizing the potential of RBOs in groundwater management in the region, SADC-Groundwater Management Institute (SADC-GMI) and LIMCOM, in December 2018 signed a Memorandum of Understanding for collaboration on groundwater issues in the Limpopo River Basin. The framework for cooperation covers the following areas:

- Transboundary Cooperation that will facilitate the integration and harmonization of groundwater provisions between the national and basin level commitments;
- Support the need to update Protocols/Agreements with reference to solutions to address shared groundwater

Support can be sought at regional institutions, like SADC-GMI.

https://sadc-gmi.org/2019/03/25/limpopo-river-basin-course-commission-limcom-and-sadc-groundwater-management-institute-launch-the-limcom-groundwater-committee/

Year of Groundwater, 2022



GROUNDWATER SUMMIT 2022

Take advantage of 2022, the year of groundwater, to raise awareness and build capacity within L/RBOs

Thank you for your attention

International Groundwater Resources Assessment Centre

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International Hydrological Programme

World Meteorological Organization

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