



## SOUTHERN AFRICAN DEVELOPMENT COMMUNITY GROUNDWATER MANAGEMENT INSTITUTE (SADC-GMI)

### ***Project: Groundwater Dependent Ecosystems (GDEs) and Biodiversity in the Khakea/Bray Transboundary Aquifer Project***

#### **Post graduate opportunity in Biodiversity and Geohydrology – 2021 to 2023**

SADC-GMI is a Centre of Excellence subsidiary of the SADC Secretariat with the mandate to promote the sustainable conjunctive surface and groundwater management and provide solutions to groundwater challenges in the SADC region. The SADC-GMI secured funding from the JRS Biodiversity Foundation to implement the Groundwater Dependent Ecosystems (GDEs) and Biodiversity in the Khakea/ Bray Dolomite Transboundary Aquifer (TBA) research project. The Khakea/Bray TBA is shared between Botswana and South Africa. The project is envisaged to run over three years from August 2020 until July 2023.

The proposed project therefore seeks to:

- Perform a desktop delineation of the Khakea/Bray Transboundary Aquifer, Delineate GDEs in the Khakea/ Bray TBA by means of Remote Sensing and Geographic Information Systems,
- Perform hydrogeological/geohydrological investigations around the identified GDEs,
- Collect ground and surface water biodiversity data at the identified GDEs and assess the ecological conditions at the GDEs,
- Identify and explain the linkages between groundwater and surface water ecosystems i.e. wetlands and rivers,  
Identify hot-spots where management interventions should be focused, and
- Develop a Groundwater Dependent Ecosystems Atlas which is, linked to a biodiversity database.

The results from this study which is in line with SADC-GMI's mandate will feed into a Decision Support System being developed for the TBA to assist both Botswana and South Africa's needs.

Leadership of this project is through Eng. James Sauramba as Project Director, supported by three key technical experts in Biodiversity; Geohydrology; and GIS/Remote Sensing respectively. Mainstreaming of Gender Equality and Social Inclusion (GESI) is assured through a dedicated GESI Expert.

#### **Post Graduate Research bursaries**

The SADC-GMI through this JRS Biodiversity Foundation funded project is offering bursaries for the following;

- MSc in Geohydrology – 1 Position at Institute for Groundwater Studies, University of the Free State
- MSc in Aquatic Ecology/Biodiversity – 2 Positions at Rhodes University/University of Venda
- MSc in GIS/Remote Sensing – 1 Position at University of Western Cape
- PhD in Geohydrology – 1 Position at Institute for Groundwater Studies, University of the Free State



- PhD in Aquatic Ecology/Biodiversity – 1 Position at Rhodes University
- PhD in GIS/Remote Sensing – 1 Position at University of Western Cape

Successful applicants will acquire skills in an exciting and widely applicable interdisciplinary fields involving biodiversity assessments, trophic marker analysis (i.e. stable isotope signatures) to study energy transfer between terrestrial and aquatic ecosystems, and the application of hydrogeology/geohydrology tools to characterise aquifers. Research projects will be tailored to individual research interests mostly focusing on GDEs biodiversity assessments and geohydrology.

## Requirements

Applications are invited from students meeting the following requirements respectively:

### Aquatic Ecology/Biodiversity

For MSc BSc Hons in Zoology/Ecology/Biological Sciences/Botany/Entomology or related subjects with an average of >60% and should meet all other Rhodes University and University of Venda admission requirements for **MSc**.

For PhD at least an MSc in Zoology/Ecology/Biological Sciences/Botany/Entomology or related subjects with an average of >60% and should meet all other Rhodes University admission requirements for **PhD**

### Geohydrology

For MSc, BSc Hons in Earth Sciences/Hydrology/Geology/Engineering Geology and should meet all other University of the Free State admission requirements for **MSc**. Eligible applicants who participated in the SADC-GMI run Young Groundwater Professionals Training Programmes are strongly encouraged to apply.

For PhD, at least an MSc in Geohydrology/Hydrogeology and meet all other University of the Free State admission requirements for **PhD**. Strong background on applications of remote sensing and GIS in Hydrogeology is important for the research so is knowledge and willingness to work in a transboundary aquifer.

### GIS/Remote Sensing:

For MSc, BSc Hons in GIS/Geospatial Sciences/Geography/Environmental Sciences or related subjects with an average of >60% and should meet all other University of the Western Cape **MSc** admission requirements.

For PhD at least an MSc in GIS/Geospatial Sciences/Geography/Environmental Sciences or related subjects with an average of >60% and should meet all other University of the Western Cape **PhD** admission requirements.

We are looking for dedicated students who are willing to conduct field and laboratory work as part of their studies. Potential students should be team players, willing to participate in extended fieldwork activities and comfortable in a multi-cultural working environment. The candidates will be expected to participate in weekly scientific discussions and monthly presentations.





SADC-GMI is an equal opportunity institution and as such female applicants and candidates with disabilities are encouraged to apply.

## Duration and funding

The MSc will run from February 2021 to November 2022, and PhD from February 2021 to November 2023. All-inclusive (registration, tuition, accommodation) bursaries are available to the qualifying postgraduate students as follows:

**PhD:** ZAR100 000.00 per annum (3 years)

**MSc:** ZAR80 000.00 per annum (2 years)

Running costs for the project will be covered directly by the grant funding through the SADC-GMI.

Award of bursaries to successful applicants will be conditional on the candidate being accepted for the chosen programme at the selected University for the 2021 intake.

**Closing Date:** 15 October 2020

## Receipt of Applications:

Please email your CV, academic record, and a letter of motivation that includes your research interests in relation to the project and clearly indicating the opportunity you are applying for in the subject line to the SADC-GMI Procurement Specialist, Ms. Mampho Ntsekhe at [litlhare@sadc-gmi.org](mailto:litlhare@sadc-gmi.org) **copying to the following emails as the case might be:**

1. Both Dr. Tatenda Dalu ([dalutatenda@yahoo.co.uk](mailto:dalutatenda@yahoo.co.uk)) and Prof. Ryan J Wasserman ([r.wasserman@ru.ac.za](mailto:r.wasserman@ru.ac.za) for **Aquatic Ecology/Biodiversity MSc and PhD study indicating which university and programme you are applying for**)
2. Prof Modreck Gomo ([gomom@ufs.ac.za](mailto:gomom@ufs.ac.za); Cc: [modgomo@yahoo.co.uk](mailto:modgomo@yahoo.co.uk)) for **Geohydrology MSc and PhD study**
3. To Mr. Farai Dondofema ([farai.dondofema@univen.ac.za](mailto:farai.dondofema@univen.ac.za)), Dr Tatenda Dalu ([dalutatenda@yahoo.co.uk](mailto:dalutatenda@yahoo.co.uk)) and Prof Timothy Dube ([tidube@uwc.ac.za](mailto:tidube@uwc.ac.za)) for **GIS/Remote Sensing MSc and PhD**

For further general inquiries on this project advertisement, please email: Ms Mampho Ntsekhe ([litlhare@sadc-gmi.org](mailto:litlhare@sadc-gmi.org))