1. Background

Southern African Development Community (SADC) is home to about thirty (30) transboundary aquifers (TBAs) and numerous national strategic aquifers that support the primary water needs and livelihoods of a significant portion of the region's population. Because of climate change, reliance on groundwater has increased. Although there is a fair understanding of the strategic aquifers, increased data collection will enhance the capacity of institutions to manage groundwater resources sustainably.

SADC-GMI, a subsidiary of the SADC Secretariat, is established as a Section 21 Not-for-Profit Company under South African law. The vision of the SADC-GMI is to ensure the equitable and sustainable use and protection of groundwater and be a Centre of Excellence in groundwater management and management of groundwater-dependent ecosystems in the region. The role of the SADC-GMI is to:

- Promote sustainable groundwater management and provide solutions to groundwater challenges in the SADC region through building capacity, providing training, advancing research, supporting infrastructure development, and enabling dialogue and exchange of groundwater information
- Conduct and support the SADC Member States in groundwater research, and serve as a focal interlocutor with national, regional, and international groundwater initiatives
- Promote the sustainable conjunctive use of surface and groundwater

The Coastal Sedimentary Basin IV is shared between Angola and Namibia. The aquifer system has not been subject to any detailed studies. Considering the limited work on Coastal TBAs undertaken to date, SADC-GMI included in its planning to investigate, based on the population vulnerability areas of priority mapping¹, the Coastal Sedimentary Basin IV shared between Angola and Namibia.

Coastal Sedimentary Basin IV boundaries, as currently defined²

2. The objective of the assignment

This project aims to research the Coastal Sedimentary Basin IV shared between Angola and Namibia through a Transboundary Diagnostic Analysis (TDA).

3. Scope of work and specific tasks of the consultant

To achieve the objectives of this assignment, the successful Consulting firm will undertake a TDA to gather the state of knowledge in the system to identify priority issues and key ways forward. Key activities for this task are:

a) Collect and synthesise existing data and information on Coastal Sedimentary Basin IV and its interaction with the surface water systems to understand the aquifer system, surface flows, ecosystems, and nature of the interactions and flows between them, climate, geology soils, land cover, land use and hydrology.

² IGRAC (2021). Transboundary Aquifers of the World. IGRAC and UNESCO.
b) Review the extent of the Coastal Sedimentary Basin IV as mapped\(^3\) to establish the aquifer system boundaries.

c) Conduct a socio-economic analysis and evaluate the potential impacts of climate change on water resources

d) Engagement of key stakeholders to identify governance issues affecting the management and development of the TBA

e) Compile and create a database of scientific data and information from both countries and facilitate its uploading on the SADC Groundwater Information Portal (SADC-GIP) as well as the SADC Groundwater Literature Archive (SADC-GLA), as appropriate.

f) Engage one Young Professional each from Angola and Botswana respectively to facilitate capacity building and knowledge transfer

4. **Key deliverables and outputs**

The outputs for which the consultant is required to submit with its proposal a draft milestone delivery plan throughout the project implementation period:

a) **Kick-off meeting** within one week after contract signature

b) **Inception Report** within 4 weeks after commencing the assignment

c) **Hydrogeology Report** - 40 weeks after the project start describing the general hydrogeologic framework of the aquifer in its transboundary context, gather hydrogeological and other relevant data for its subsequent assessment through a groundwater budget and establish the basis for (1) a transboundary conceptual and numerical model of the groundwater flow system and, (2) preparation of a Joint Strategic Action Plan (JSAP) for the TBA including governance mechanisms for the TBA

d) **TDA report** within 52 weeks after commencing the assignment

e) **Monthly progress meetings** on dates to be agreed with SADC-GMI from month to month

f) **Bi-monthly interim progress reports** to SADC-GMI starting within 8 weeks of commencing the assignment and after that by 2nd week of every second month

g) Consultants may specify additional outputs in their proposal to match their proposed methodology

5. **Eligibility**

i. This assignment targets a firm with a track record of more than 10 years of proven experience in transboundary water governance in sub-Saharan Africa, particularly having at least 5 years of experience in the groundwater sector within the SADC region.

ii. The proposal must demonstrate experience in at least three projects undertaking detailed work in a TBA context in the SADC region.

iii. The consultant must demonstrate familiarity with undertaking TDA/JSAP processes.

iv. Be familiar with working on projects with complex institutional settings in a regional context.

6. **Team composition with an estimate of key experts' input**

The minimum qualifications, skills and experience for key experts whose CVs are to be evaluated as part of the assessment of proposals are as defined below. The Services are expected to be performed mainly in the two concerned SADC Member States of Angola and Namibia.

**Key Expert 1:** Team Leader (Estimated 60 days)

At least a Master's degree in a relevant water-related discipline and 15 years of experience working in the groundwater field. At least 10 years should have been in groundwater governance research and development. Demonstrated team leadership on at least 3 similar research projects, 1 of which should have been in the SADC region at the Member State or regional level. The team leader must demonstrate proven proficiency with the regional groundwater studies, regional groundwater numerical modelling, conjunctive water resources management concepts and engagement of multi-country transboundary water course stakeholder institutions and issues. The Team Leader should be fluent in English. Professional proficiency in the other SADC Languages (mainly Portuguese) is desirable.

**Key Expert 2:** National hydrogeologist Angola (Estimated 40 days)

At least a Master's degree in hydrogeology and 10 years of working experience in the groundwater field, 5 of which should have been in Angola. The national hydrogeologist should know key issues pertaining to managing groundwater resources in national and transboundary aquifers in the SADC region, including recharge, pollution and impacts of climate change and droughts. Should have participated in at least 2 projects where similar skills required for this assignment were applied. Demonstrated skills in applying and interpreting groundwater
modelling and water quality models, including using related software and demonstrated expertise in developing conceptual and numerical groundwater models. The national hydrogeologist should be fluent in Portuguese. Professional proficiency in the other SADC Languages (mainly English) is desirable.

**Key Expert 3: National hydrogeologist Namibia (Estimated 40 days)**

At least a Master's degree in hydrogeology and 10 years of working experience in the groundwater field, 5 of which should have been in Namibia. The national hydrogeologist should know key issues pertaining to managing groundwater resources in national and transboundary aquifers in the SADC region, including recharge, pollution and impacts of climate change and droughts. Should have participated in at least 2 projects where similar skills required for this assignment were applied. Demonstrated skills in applying and interpreting groundwater modelling and water quality models, including using related software and demonstrated expertise in developing conceptual and numerical groundwater models. The national hydrogeologist should be fluent in English. Professional proficiency in the other SADC Languages (mainly Portuguese) is desirable.

**Key Expert 3: Hydrologist (Estimated 40 days)**

At least a Bachelor's degree in an engineering discipline (Civil/Water) or similar and about 10 years of experience in assessing the hydrology of major rivers and potential climate change impacts. Should have experience with at least two projects of a similar magnitude in Southern Africa. Experience within Angola and Namibia will be beneficial. Proven experience in data analysis and interpretation using computer software models is essential. Fluency in English is mandatory, and working knowledge of Portuguese is desirable.

**Key Expert 4: Institutional and governance expert (Estimated 20 days)**

Ideally, possess at least a Master's degree in international development, institutional development, development studies or similar with at least 10 years in institutional assessment and organisational development in the public sector/national government ministries, departments and agencies, and private sector. Familiarity with the SADC region's regional integration and development agenda is essential, particularly in the groundwater sector, through participation in at least 2 institutional assessment and development projects implemented in the SADC region. Experience with transboundary water courses, governance structures and institutional strengthening is required.

**Non-Key/Other Expert Staff**
The consultant shall select and hire other experts and support staff as required according to the deemed requirement to deliver the Services in accordance with the contract (e.g. Communications expert, Water quality experts, modellers, etc.). CVs for such other experts should not be submitted in the Technical Proposal. Although hiring other expert staff will not be subject to the prior review of the Client, such staff shall otherwise meet the professional standards and possess adequate experience to conduct their work safely and professionally.

NB: The firm may deploy additional non-key experts and support staff to deliver the outputs within the allocated period. The time inputs for these additional experts and support staff are over and above the levels of effort listed against each Key expert above.

The levels of effort listed against each Key expert are the maximum allowable professional time inputs inclusive of fieldwork, office work and travel

7. **Schedule and duration of the assignment**

This is a once-off assignment without any obligation for follow-up work, and it is intended to be implemented over approximately 12 months from the contract signature with an estimated aggregate level of effort of 200 person-days for key experts only, including all field and office work.

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Level of Effort (Days)</th>
<th>Deadline (weeks)</th>
<th>Delivery</th>
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</thead>
<tbody>
<tr>
<td>Kick-off meeting</td>
<td>1</td>
<td>1 week</td>
<td></td>
</tr>
<tr>
<td>Inception Report</td>
<td>20</td>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td>Hydrogeology report</td>
<td>80</td>
<td>40 weeks</td>
<td></td>
</tr>
<tr>
<td>TDA Report</td>
<td>99</td>
<td>52 weeks</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>200</strong></td>
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The consultant shall include in their submission a proposal for deploying the key experts and any non-key experts and support staff deemed necessary to deliver the objectives of the assignment timely.

8. **Liaison and Logistics**

On a day-to-day basis, the consultant will liaise with the SADC-GMI through the Senior Groundwater Specialist and ultimately be accountable to the Executive Director of SADC-GMI.

Logistics for international air and road travel and cross-border travel are the consultant's responsibility. If also required, SADC-GMI can issue letters of support to facilitate the
authorities issuing necessary access to the Member States. The Consultants will meet the visa and necessary cross-border charges. These should therefore be included in the consultant's technical and financial proposal.

9. **Contract Type and other Information**

This is a lump sum contract since the scope of is well defined and the contract amount is fixed, and all payments will be linked to the contractual milestones. The client will provide the consultant with data and information to facilitate execution of the assignment including introduction letters to relevant stakeholders.