AMBASSADE
DE FRANCE
EN AFRIQUE DU SUD,
AU LÉSOTHO
ET AU MALAWI

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TERMS OF REFERENCE

External evaluation of the project "Managed Aquifer Recharge and the Microbiome"

1. Rationale

The Embassy of France in South Africa is inviting bids for the external evaluation of its project "Managed Aquifer Recharge and the Microbiome*"*.

The project started in 2024 and will be completed in April 2026. The evaluation will cover all activities undertaken until March 2026, and will be overseen by the Cooperation and Cultural Affairs Department of the Embassy of France (SCAC) based in Pretoria.

The evaluation will serve to assess the project design, its implementation and achievements. The evaluator will be expected to formulate recommendations to guide future interventions pertaining to the Embassy of France.

These Terms of Reference (ToR) spell out the requirements for the external evaluation.

2. Brief presentation of the project

2.1 Context and objectives

After the severe drought that hit the region from 2015 to 2018, the City of Cape Town (CoCT) adopted a new water strategy called "Our Shared Water Future" to make the metropolitan area's water resources more resilient and sustainable. As part of this commitment, the CoCT is working to manage and optimize its management of groundwater resources, including through managed aquifer recharge (MAR).

The concepts of MAR and stormwater/groundwater interactions are becoming increasingly important in strengthening the resilience of urban water systems, as is researching the impacts of emerging contaminants, particularly regarding the recycling of waste into water resources. Thanks to AFD funding (through a FEXTE project), BRGM is working with CoCT to provide technical expertise in managing exploited groundwater resources and innovative approaches to monitoring the impact of management practices on water quality.

This technical support revealed the importance of understanding the microbial biodiversity of aquifer systems. This includes the ecosystem services they provide, which must be considered when developing aquifer and MAR management strategies. Additionally, they can be used as indicators of changes in water quality and as an early warning system for disturbances in the aquifer.

The CoCT has clearly expressed the need for a detailed understanding of groundwater microbial diversity and its role in protecting water quality. Additionally, they have expressed the need for a toolbox for diagnosing MAR systems and monitoring aquifer health. This project aims to demonstrate the value of using microbial bioindicators and show how they complement conventional geochemical and hydrogeological tools in aquifer management.

Cape Town provides an excellent local and regional context within the Western Cape Province. Our partnership with the Water Research Commission (WRC) and the Future Water Institute at the University of Cape Town will ensure that our research and development efforts contribute to the development of national policy in South Africa.

The project's main goal is to predict the potential outcomes of implementing the technical solution of controlled aquifer recharge. The project has three parts:
i. Define the microbial component (microbiome) of the studied groundwater and its importance in groundwater quality and supply (biodiversity heritage).
ii. Popularize and disseminate this information to the general public as part of wider efforts to educate the public about their role in preserving groundwater quality.
iii. Develop a toolbox of bioindicators for operations managers to use in managing MAR programs.

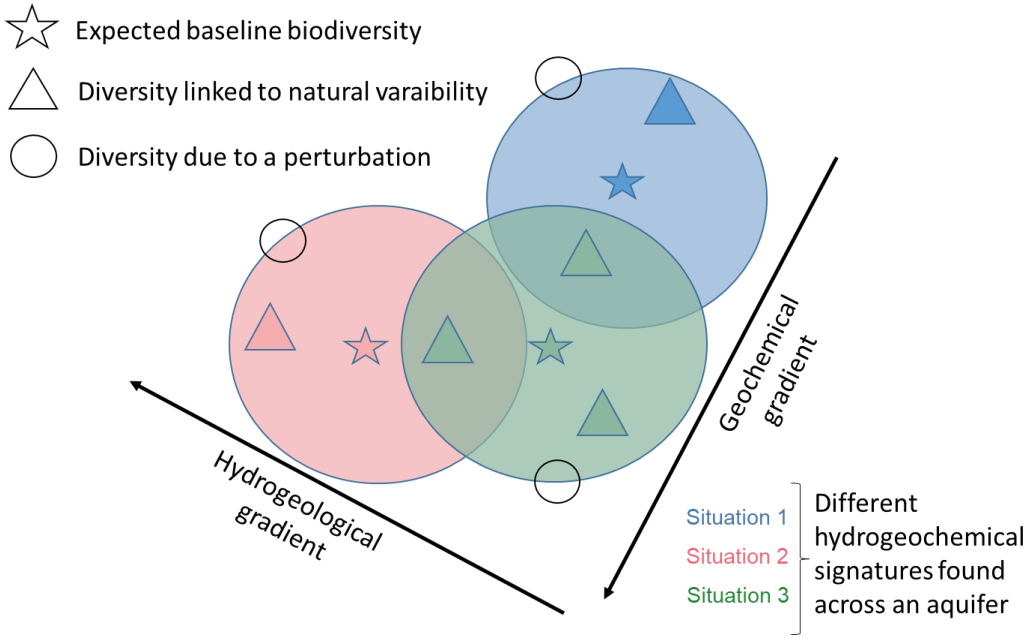
The project uses Atlantis and and Cape Flats as comparison sites for the study. A third zone, Prince Albert, was also initially considered as a comparison site, having been designated for MAR, but having no MAR activity at present. The Atlantis Water Supply System (AWSS), which has been in operation for over 40 years, was designed to provide drinking water to the industrial city of Atlantis, located 50 km north of Cape Town. Stormwater and treated domestic wastewater are collected in a system of basins and channels, then infiltrate the alluvial aquifer via two infiltration basins, increasing the city's groundwater supply by around 30%. Prince Albert, located some 400 km east of Cape Town, receives its bulk water supply from nine boreholes and a system of irrigation canals from the Dorps River. A MAR feasibility study was carried out from 2006 to 2007 and completed in 2010. Excess water from the furrow system is used to recharge the aquifer during the winter to ensure there is enough water for the city's average summer and winter needs. Despite its success, MAR is not currently in place. As a result, it is a complementary site to Atlantis, allowing the project to study an established MAR system and compare it to a relatively pristine site earmarked for future MAR development. The Cape Flats Aquifer (CFA) is the study site for the AFD-FEXTE project and is another example of a site where MAR is being evaluated, albeit with different baselines of existing anthropogenic pressures, such as pollution and unmanaged abstraction. This also ensures continuity between the two projects.

The systematic study of these sites aims to produce results at different levels: i) a comprehensive assessment of the microbial biodiversity of the aquifer system (the state of play); 2) the potential ecosystem services provided by the aquifer (what's at stake); the potential influence (positive and negative) of MAR; and, iii) a series of biomarkers that can be used to monitor the medium- and long-term impact of MAR on the health of the receiving aquifer and water quality. The methodological approaches developed and validated on the study sites should be able to be extended to the national level, strengthening water management in South Africa and contributing to national policies. Finally, the project also intends to influence governance and policy at different scales, including the potential for joint use to strengthen urban water resilience, and will contribute to the development of a MAR suitability map.

2.2 Activities and state of advancement

a. Activity 1: Assessing and characterizing case study sites

the project used two comparative case study sites: 1. the Cape Flats aquifer (CFA; previous AFD-FEXTE project site); 2. Atlantis.
Both the Cape Flats and Atlantis aquifers have implemented MAR systems.
The objectives of this technical component were to determine the microbial biodiversity of recharge waters and the receiving aquifer system (the microbiome); identify the functional potential of the microbiome; establish a link with water chemistry and water quality; and identify bio-indicators that can be used as monitoring tools. The first step in achieving these objectives is to identify the basic bacterial diversity associated with each hydrogeochemical situation, enabling us to identify where this diversity is affected by disturbance (Figure below).



This component is to be addressed through at least two MSc theses led by UCT and represents the majority of the work of the post-doc, who will split his time between BRGM and UCT. This will ensure that the project is fully integrated in both countries, and will benefit from skill-building actions. Finally, a transfer of knowledge from BRGM to CoCT in terms of analytical chemistry and water analysis is to be implemented. The results are to be disseminated and gradually incorporated into teaching materials (Component 3), as well as presented at Component 2 workshops. The French Embassy will also be able to communicate on these results.

b. <u>Activity 2: Understanding the role of biomarkers in aquifer monitoring and management</u>

The aim of this component is to take up the results of Component 1 and define the operational "biomarkers" toolbox. In collaboration with local and national end-users (CoCT, WRC), this component shows how they can be involved in best management and monitoring practices, and will demonstrate the added value of this approach. This translates into a series of workshops throughout the project, initially to define the operational needs of end-users and progressively to show how the toolbox meets them. These workshops also involve local players in the CFA and Atlantis zones, as part of Component 3.

c. <u>Activity 3: Educate, raise awareness and build local capacity</u>

CoCT has identified women living in Cape Flats townships as a strategic audience for awareness-raising and education activities, particularly with regard to the importance of groundwater protection. Indeed, the townships of Cape Flats are located above the water table, and the activities that take place there contribute directly to the quality of the water (and, to a lesser extent, its quantity) in this aquifer. In the current local socio-economic context, women are most likely to spend the majority of their time at home. They and their children are therefore the most exposed to problems of access to drinking water. Just as importantly, they are on the front line when it comes to assuming responsibility for protecting groundwater resources. Giving them the knowledge and means to guarantee access to drinking water, and to understand the importance of protecting this vital resource, is therefore a priority in the wider efforts to ensure a sustainable water supply in the Western Cape.

Women are acutely aware of the repercussions of poor water quality and access restrictions: they are directly affected by water pollution (and are well placed to stop it) as well as by the health consequences of poor water quality.

The main objective is twofold:

1. to establish a mentoring program between UCT (with a focus on women engineers) and young women from the schools visited, to inspire the next generation of women engineers;

2. to develop new content for the education and awareness program, targeting female students and raising awareness among local women of the need to care for the aquifer that provides their domestic water supply.

This part of the project will involve local groups.

It must produce educational materials for GMI (conditional on their agreement) and CoCT's own training activities, to be made available to the Groundwater Division via their Groundwater Kids Foundation ("Promoting and supporting groundwater education practices and awareness in schools in the SADC region") and Groundwater Project ("The Groundwater Project's mission is to provide accessible, engaging and high quality educational materials, free online").

3. Purpose of the evaluation

This evaluation seeks to enable accountability and learning. The evaluation should:

3.1. Assess the project to date, particularly:
- take stock of the activities implemented and results achieved, taking into account the project plans;
- determine the relevance of the project's logic and interventions, their efficiency, effectiveness, impact and sustainability;

The level of detail to be examined will be agreed further down the line.

3.2. Draw lessons from the project implementation:
- assess the need to further and/or expand this type of intervention;
- identify the conditions and good practices to inform the development of a new intervention strategy to continue impactful engagement.

4. Services requested

4.1. Stocktaking

The stocktaking exercise will include all aspects of the project, and consist of:

- a brief descriptive account of the activities implemented, the financial execution and the governance of the project.

  The evaluator will document and explain any departure from the planned activities and expected results. Doing so, they will be mindful to identify all context-specific events and circumstances that may have had an effect on the project's implementation and achievements;

- a report on the actual implementation strategy and the way this was carried out.

4.2. Evaluation criteria and questions

The evaluation will apply the international OECD/DAC evaluation criteria of relevance, process/ implementation, effectiveness, efficiency, impact and sustainability. In addition, the evaluation should consider the gender-sensitivity and responsiveness of the project.

Evaluation criteria	Evaluation questions (non-exhaustive)
Relevance	- Were the actions in line with local needs in terms of access to sufficient, high-quality water? - Were the actions in line with the strategies of local stakeholders in terms of middle- to long-term access to sufficient, high-quality water? - Is the choice of stakeholders involved in the project appropriate?
Coherence	- To what extent has this project been articulated with other French initiatives, including the previous AFD\FEXTE project and other (BRGM) actions elsewhere in the world? - What have been the limitations to fostering such coherence and complementarity (external coherence)? - Were the project interventions coherent with one another (internal coherence)?
Effectiveness	- To what extent was the project implemented according to the initial plan? - To what extent has the project achieved the expected results? - What production of scientific knowledge has this project enabled? - What was the impact on the local community? - How well were the project resources spent - by the Embassy of France, by the scientific coordinator BRGM, and by project grantees? - To what extent has the project contributed to France's support for the water strategy of Cape Town and South Africa? - To what extent has the project contributed to developing relations between the French and South African stakeholders?
Efficiency	- How significant is the effect (results and impact) of the project in relation to the costs and resources used? And with regard to the timeframe? - Was the overall project managed efficiently? What about the management costs? Were the Embassy's management, follow-up and verification processes adequate? - Were the resources spent efficiently – by the Embassy, by the scientific coordinator BRGM, and by each grantee?
Impact	- What has the project's impact been on 1) the target groups; 2) the broader areas targeted by the interventions in City of Cape Town; and 3) general framework for cooperation on a South African and Southern African level? - What scientific communications were enabled? - To what extent has this project helped to showcase French expertise?
Sustainability	- What lasting effects can be identified (positive and negative) from the whole project? - Where relevant, was the local community empowered through the project? Did the project reinforce democratic and inclusive decision-making? - What permanent, systemic changes can be identified as a result of the project interventions? - Do the methodologies and innovations developed have the potential to be replicated in other projects?
Gender	- To what extent did the project succeed in being gender-responsive across the various interventions?

	- To what extent did the project succeed in addressing interconnections between gender inequalities and climate change? - To what extent did the project succeed in reaching women as final beneficiaries?

4.3. Conclusions, lessons learned and recommendations

Here the evaluator will present the main conclusions of the assessment conducted according to the evaluation questions, and draw the key lessons and strategic learnings from the evaluation, for instance (but not limited to):

- the added value of the project for South African stakeholders and the local communities;
- the added value of the project in contributing to bilateral cooperation priorities between France and South Africa;
- findings and lessons regarding the management of the project.

The evaluator will also formulate strategic and operational recommendations to be considered by the French Ministry of Europe and Foreign Affairs with regards to:

- The sectors / issues for which the Embassy of France could best leverage its funding and interventions;
- Potential target groups for future cooperation and funding opportunities;
- Types of activities that would maximize the effect of similar funding opportunities;
- How to build on the work to date, and strengthen the French Embassy's interventions for more systemic impact;
- Complementarity with South African public interventions in the field;
- Complementarity with interventions from AFD.

5. Management

This evaluation is commissioned by the Cooperation and Cultural Action Department (SCAC) of the Embassy of France. The SCAC will be the focal point for any planning, implementation and administrative matters pertaining to the evaluation.

The evaluator will present the final evaluation to the steering committee members of the project. The Committee will meet once with the evaluator at close-out stage.

The steering committee is composed by:

- Aurélien Leynet, Attaché for science and technology for the French Embassy
- Adeline Sang, Secretary-General of SCAC for the French Embassy
- Christopher Bryan, Research Engineer - Geomicrobiology for BRGM
- Éric Gomez, Geographic Director - Southern and Eastern Africa for BRGM
- Myrna Scholtz, Environmental Education Officer, for the City of Cape Town
- Kirsty Carden, for UCT/Future Water Institute
- Susan Harrison, for UCT/CeBER

6. Methodology

6.1. Key principles

The principles underpinning the approach to the evaluation are:

- Impartiality and independence of the evaluation process from the programming and implementation of the project;
- Credibility of the evaluation, through the use of appropriate skills and independent expertise and
- Transparency of the evaluation process, including dissemination of results to the relevant stakeholders;
- Participation of the relevant stakeholders in the evaluation process, to ensure different perspectives and views are taken into account; and
- Usefulness of the evaluation findings and recommendations, through timely presentation of relevant, clear and concise information to decision-makers.

6.2. Methodology

The evaluation will be carried out using a desk review, interviews (phone / in-person) and field visits, where relevant and as permitted by the budget. The proposed methodology for the evaluation will be subject to the approval of the Embassy of France.

The desk review should cover the following documents:

- project plan and budget (including amendments if applicable);
- documents and materials produced throughout the project;
- evidence of activities and results collected throughout the project, including interim reports, minutes of project meetings, event signature lists, event programmes, travel reports, procurement documentation, quotations, invoices, proofs of payment, any other supporting document, etc.
- any other relevant documentation.

The evaluator is expected to engage with the relevant Embassy staff members and any project stakeholders when relevant. The evaluation should build on interviews with Embassy staff not only to collect information and insights, but also to make (collective) sense of and understand the following:

- the stakeholders' engagement in the process;
- the difficulties faced (internal and external);
- their perspectives on the issues;
- the capacity, awareness, relationships and resources developed during the the project and how this has been used

Bidders are requested to explain how they propose to collect information from the various stakeholders.

There are diverse stakeholders and thus these should be addressed by using different methodologies (field visits, collective or individual interviews, videocalls etc):

- Members of the research teams, permanent and non-permanent researchers involved in the project, at BRGM, the Future Water Institute and CeBER at Cape Town University
- Groundwater management operations managers, professionals and experts from the city of Cape Town
- Educators and science popularizers
- Local groups.

6.3. Data availability

The evaluator will have access to the following information:

- Project description, budget, as amended if applicable;
- Contractual agreements between the Embassy of France and the project partners;
- Financial reports reflecting project spend;
- Project reports compiled by the Attaché for science and technology and/or the Project Officer;
- Narrative and financial interim project reports from the project partners;
- Travel reports where relevant;
- Communication materials
- Financial documentation (e.g. procurement documentation, quotations, invoices, proofs of payment)

7. Process and deliverables

The evaluation will follow a 3-stage process, with deliverables as detailed below (see also the tentative timeline in section 8 below).

All deliverables will be submitted by email to the Embassy's Attaché for science and technology.

The evaluator shall consider the comments received from the Embassy of France without prejudice to their independence.

All deliverables will be approved by the Embassy by email.

7.1. Inception

This stage will serve to:

a) clarify the expectations of the French Embassy and the scope of the evaluation;
b) finalise the methodology and the evaluation questions.

- **Inception meeting** between the evaluator and the Embassy of France
  This meeting will serve to discuss the scope of the evaluation in more detail and share the documents and contact details needed for the evaluation.

- **Inception report**
  In this report, the evaluator will recall the context and purpose of the evaluation; list the evaluation questions, and detail the methodology and tools / means to collect the data, specify the schedule for data collection (including field visits if any) and provide a list of stakeholders to be interviewed (where possible in-person, otherwise through calls / online communication).
  The evaluator will submit a draft inception report to the Embassy's Attaché for science and technology. The evaluator may be requested to submit a revised version, taking into account the comments received, for approval.

7.2. Data collection and analysis

During this stage, the evaluator will collect the data needed for stocktaking and analysis according to the evaluation questions. This will be done through a desk review of project documents, interviews and field visits when appropriate.

- **Field visits**
  Field visits to relevant projects and organisations should be carried out for data collection purposes where logistically and budgetarily feasible (they must be budgeted for by the evaluator). They will be carefully planned, taking into account the evaluation timeline and availability of the relevant people and organisations.

  The evaluator will provide the Attaché with terms of reference for each visit, and submit concise field visit reports including factual information, data obtained and challenges met.

  There should be at least one site visit CFA and Atlantis sites.

- **Draft evaluation report** (max. 30 pages, excluding annexures)
  The draft report will include: stocktaking (see section 4.1 of the ToR), initial analysis according to the evaluation questions (see section 4.2), and an outline of the work remaining and timeline to complete the latter.

7.3. Final reporting

This stage will allow the evaluator to finalise their analysis, draw conclusions and formulate recommendations.

- **Final evaluation report** (max. 50 pages, excluding annexures)
  The final report will be structured as follows:
  - Table of contents
  - List of acronyms
  - Executive summary (2 to 4 pages)
  - Mapping of the sub-set of supported CSO projects
  - Stocktaking
  - Analysis according to the evaluation questions
  - Conclusions
  - Strategic and operational recommendations
  - Annexures: list of stakeholders interviewed and field visits conducted; data collection instruments; list of documents used for the evaluation (including websites if applicable); field visit reports

- **A summary** of the validated final report (max 5 pages), using the template provided by the Embassy:
  - Summary of the evaluation and analysis
  - Main findings
  - Strategic and operational recommendations

The report and the summary will be the sole property of the French Ministry of Europe and Foreign Affairs (MEAE). The evaluator shall not communicate, publish or use its content. The report may be shared, in full or in part, with the relevant South African stakeholders as discussed and agreed with the Embassy of France.

- **Close-out meeting** with the steering committee.
  This meeting will allow the evaluator to present the findings of the evaluation to the steering committee, and provide an opportunity to discuss the conclusions and recommendations.

8. Tentative timeline

The evaluation will be carried out between 1st October 2025 and 31 Avril 2026. Bidders are requested to indicate the proposed number of working days within this time period.

The tentative timeline is as follows:

	Dates or periods
Deadline for submission of tenders	28 August 2025
Selection and award of contract	By 12 September 2025
Inception meeting	by 10 October 2025
Submission of draft inception report	15 January 2026
Validation of inception report	30 January 2026
Submission of draft final report	13 March 2026

Review of draft report by the Embassy	19 March 2026
Submission of final report	13 April 2026
Close out meeting with steering committee	Week of 25 April 2026

The timeline will be reviewed and confirmed with the evaluator at inception phase, without changes to the completion deadline.

9. Budget

The maximum available budget for this work is EUR 30 000, all costs and taxes included.

Tenders should be market-related reasonable.

The contract will be in EUR, but can be paid out in ZAR at the exchange rate calculated by the French Economy Ministry at the time of payment.
EUR / ZAR : https://www.economie.gouv.fr/dgfip/taux_chancellerie_change_resultat/pays/ZA

10. Additional information for bidders

- Further information about the project may be obtained from the SCAC. Requests should be addressed by email to aurelien.leynet@diplomatie.gouv.fr.

- The evaluator should have knowledge and expertise/experience in the following areas:
  - design and delivery of project evaluation; experience in M&E of social development and/or governance projects would be an asset;
  - Using reviews and evaluation as a tool for learning;
  - Demonstrated understanding of the governance structures in South Africa and of the energy transition sector;
  - Excellent communication skills, both orally and in writing;
  - Understanding of French is not required but an advantage since pivotal project documents are in French
  -

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  - Excellent communication skills, both orally and in writing;
  - Understanding of French is not required but an advantage since pivotal project documents are in French

12. Bidding process and how to apply

Interested candidates must submit the following documents/ information:

- **Narrative proposal** (max. 20 pages)
  - (i) Explain their understanding of the work and deliverables,
  - (ii) Provide a brief methodology on how they will approach and conduct the work, including a tentative schedule;
  - (ii) Explain why they are the most suitable to conduct the evaluation
- **Financial proposal**, based on the template in Annexure
- CV of relevant consultant(s) highlighting past experiences in similar projects/assignments
- At least 2 references

Interested candidates are requested to submit an electronic copy of their expression of interest/ proposal with the email subject REF: "Just Transition Project Evaluation – *[name of Bidder]"*.

Applications must be submitted latest **by 28 August 2025, COB**.

Contract award criteria

Description		Weight
Criteria		
a	Competence and experience with regard to climate change / energy transition / resilient cities / research cooperation / public policy	20
b	Competence and experience with regard to project evaluation (data collection, analysis, recommendations)	20
c	Adherence to ToR's specifications and related requirements, clear understanding of needs and deliverables	20
d	Robustness and relevance of the methodology	10
e	Ability to deliver assignment within the given timeline	10
f	Communication, writing skills and language proficiency	10
g	Competitive fee rates and expenses in relation to the market and demonstration of value for money	10
Total		100

ANNEXURE – FINANCIAL PROPOSAL

Please provide the following information:

	Expert name 1	Expert name 2	Expert name 3
Daily rate (specify the currency)			

Description	**Number of days**			**Total number of days**	**Amount (in CURRENCY)**
1 – Inception phase					
Sub-total (1)					
2 – Data collection and analysis					
Sub-total (2)					
3 – Final submission					
Sub-total (3)					
4 – Other costs					
Sub-total (4)					
TOTAL					