Strengthening the sustainable management of the Senegal-Mauritania Aquifer System to ensure access to water for the populations facing climate change

TERMS OF REFERENCE

Recruitment of a National Climate Change Consultant contributing to the Transboundary Diagnostic Analysis (TDA) for groundwater in the Senegal-Mauritania Aquifer System (SMAS)

(Gambia, Guinea Bissau, Mauritania and Senegal)

[AC/OSS/SMAS_ Changement-Climatique/160725-27]

July 2025

1. CONTEXT

The Sahara and Sahel Observatory (OSS) is an international Organization with an African vocation, created in 1992 and based in Tunis since 2000. Its members include 35 countries (28 African[1] and 7 non-African), 13 regional Organizations, UN Organizations. The OSS mission is to support its African member countries in the sustainable management of their natural resources in a particularly adverse climate change context. Its activities are primarily located in the arid, semi-arid, and dry sub-humid regions of Africa.

As part of its efforts to promote sustainable water resources management, the OSS focuses on the collaborative management of transboundary aquifers in Africa, including the Senegal-Mauritania Aquifer System (SMAS)[2], shared between Gambia, Guinea-Bissau, Mauritania and Senegal. This aquifer system is crucial for the livelihoods of local populations, particularly in arid regions where water resources are limited. However, overexploitation of the aquifers and the risk of groundwater pollution are major challenges to contend with.

In May 2020, a Regional Working Group (RWG) for transboundary cooperation on the Senegal-Mauritania Aquifer Basin (SMAB) was established. Its members are the four states sharing the basin (Gambia, Guinea-Bissau, Mauritania and Senegal), the Gambia River Basin Development Organization (OMVG)[3], the Senegal River Basin Development Organization (OMVS)[4] and the OSS, which are involved in this regional dialogue. The purpose is to strengthen transboundary cooperation between the SMAB countries and to encourage them and the Transboundary Basin Organizations (TBOs) to establish a sustainable mechanism for collaborative transboundary management of the SMAB. The regional dialogue on the SMAS is currently facilitated and supported by several international Organizations, including the Geneva Water Hub, the Secretariat of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE), and the International Groundwater Resources Assessment Centre (IGRAC).

Since its establishment, the RWG has engaged in the design of a joint program and action plan to fulfill its mission. This program was validated by the ministers of the four countries in September 2021.

The "Strengthening the Sustainable Management of the Senegal-Mauritania Aquifer System to Ensure Access to Water for the Populations Facing Climate Change - SMAS project" is part of the RWG program and will be implemented in close synergy with it. The Project Identification Form (PIF) was developed with UNEP and approved by the GEF in November 2021 following a consultation, development, and review process, followed by the development of the SMAS project document, which was approved by the GEF in June 2022. The financing agreement was signed in January 2024, marking the official launch of the project, which is funded by the GEF (Global Environment Facility) through the United Nations Environment Program (UNEP). The project was officially launched in July 2024 in Senegal.

This regional project aims to promote cooperation between the four (04) countries and to strengthen institutional capacity for the protection and sustainable management of the Senegal-Mauritania transboundary aquifer in order to improve water and food security as well as resilience to climate change. THE OSS is the lead executing agency for the project and will work closely with the national agencies of the participating countries, and transboundary basin ORGANIZATIONS such as OMVG and OMVS.

As part of the SMAS project, a Transboundary Diagnostic Analysis (TDA) will be carried out to identify the main challenges and opportunities related to the sustainable management of the Senegal-Mauritania Aquifer System (SMAS). This TDA will constitute an essential technical basis for the development of the SMAS Strategic Action Program (SAP).

[1] Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Ivory Coast, Djibouti, Egypt, Eritrea, Ethiopia, Gambia, Guinea-Bissau, Guinea Conakry, Kenya, Liberia, Libya, Mali, Morocco, Mauritania, Niger, Nigeria, Uganda, Central African Republic, Senegal, Somalia, Sudan, Chad & Tunisia

[2] Senegal-Mauritania Aquifer System: Acronym reserved for the project financed by the GEF

[3] Gambia River Basin Development Organization (OMVG)

[4] Senegal River Basin Development Organization (OMVS)

To inform the regional TDA, national TDAs will be developed in each participating country (Gambia, Guinea-Bissau, Mauritania and Senegal). These national analyses will be based on several thematic studies covering the impacts of climate change, the environment, socioeconomics and the legal framework. The thematic reports produced in each country will be consolidated to develop regional thematic reports, which will form the basis for preparing the regional TDA.

National consultants will be recruited in each country to conduct these specific studies, with the support of the National Inter-ministerial Committees to ensure the quality and relevance of the analyses at the local level. This document is the ToRs for the recruitment of a national consultant specializing in climate change, contributing to the Transboundary Diagnostic Analysis (TDA) for groundwater resources within the national framework of the SMAS.

2. PURPOSE OF THE CONSULTATION

The mission aims to produce an in-depth analysis of the impacts of climate change on SMAS groundwater resources, with a view to:

- Identifying specific vulnerabilities to groundwater resources and local populations;
- Analyzing climate trends and their implications for aquifer recharge and quality;
- Formulating recommendations for adaptation and sustainable resource management measures.

3. IMPORTANCE OF CLIMATE CHANGE FOR SMAS

Until recently, climate change was often considered an external factor in international transboundary water projects, such as those of the Global Environment Facility (GEF). Consequently, its inclusion in the TDA and SAP processes was limited. However, numerous studies have demonstrated that climate change significantly influences several transboundary issues.

These influences include the variability of groundwater resources, with impacts on aquifer recharge and piezometric levels; the loss of ecosystems and biodiversity, due to the reduction of groundwater-dependent habitats; the deterioration of water quality, particularly due to increased salinization or the introduction of invasive species; and water use conflicts, which exacerbate tensions between agricultural, domestic and industrial uses. Thus, although climate change is not systematically classified as a transboundary issue, its increasing effects on aquifer systems such as the SMAS require a thorough understanding to ensure that future interventions are both resilient and adaptable. The national climate change TDA will therefore need to comprehensively examine the impact of climate variability and future scenarios on groundwater resources. The results of this analysis will guide strategic actions for the sustainable and resilient management of the SMAS at the transboundary scale.

4. RESPONSIBILITIES AND DUTIES OF THE CONSULTANT

Under the supervision of the project coordinator based at the OSS, the national consultant specializing in climate change will work in close collaboration with national stakeholders and other project experts, and will be required to carry out the following services:

- Collect and analyze existing documents related to the SMAS project, including previous reports and relevant studies on the Senegal-Mauritania aquifer system and the Senegal and Gambia river basins;
- Review documents produced as part of the RWG work on improving knowledge and managing SMAS water resources;
- Study documents and reports from similar projects or initiatives, with a particular focus on:
  - ✓ Studies concerning the impacts of climate change;
  - ✓ Environmental, socio-economic and legal analyses.
- Identify gaps and missing data, particularly those related to the impact of climate change on SMAS groundwater resources, and propose solutions to address them;

- Assess the groups most vulnerable to climate change within the national SMAS framework, conducting an in-depth analysis of their specific needs to better understand their exposure and adaptive capacity;
- Conduct a detailed analysis of climate impacts on the SMAS transboundary aquifers, considering the major transboundary risks identified by the Inter-ministerial Committee, as well as the hydrological dynamics of the Senegal and/or Gambia rivers;
- Draft a national thematic report, consolidating the results of the analyses and including strategic recommendations adapted to the national context, for better management of climate impacts on groundwater resources;
- Present the thematic report at a national validation workshop.

5. EXPECTED RESULTS

- A detailed identification of vulnerable groups, with an analysis of their specific needs in terms of adaptation to climate change;
- A compilation of existing data, including climate projections, impacts on aquifers, and socio-economic aspects related to the use of groundwater resources, consolidated in a harmonized format and ready for integration into regional databases;
- A diagnosis of data gaps, with concrete proposals to fill these gaps and improve the quality of future analyses;
- A comprehensive national thematic report analyzing the impacts of climate change on SMAS groundwater resources, including strategic recommendations corresponding to the national context.

6. METHODOLOGY

The consultant is free to propose their own methodology, but a participatory approach is strongly recommended, involving national and local stakeholders, in coordination with the National Inter-ministerial Committees, the RWG and other thematic consultants. The methodology must be detailed in the proposal, specifying the key steps, tools, and techniques to ensure quality results that meet the established objectives.

7. PROFILE AND QUALIFICATIONS OF THE CONSULTANT

7.1. Training and academic level

A Master's degree, an Engineering degree or a Ph.D. in climatology, environment, natural resources management, or a related field.

7.2. Experience and skills required

- A minimum of ten (10) years of experience in various related fields, such as national and international climate policies and measures;
- Experience in integrating climate change mitigation and adaptation measures into development interventions in West Africa, or field operations involving climate change in the region;
- Proven experience in integrating climate change mitigation and adaptation measures into development projects, particularly in West Africa;
- Practical experience in field operations involving climate change issues in the region;
- Good understanding of the principles and approaches of integrated aquifer and river basin management, particularly in a transboundary context;
- Excellent writing and communication skills in French or English, depending on the country context;
- Developed skills in preparing high-quality technical reports;
- Team spirit and willing to collaborate effectively with a variety of stakeholders;
- Proficiency in office software (MS Word, MS Excel, MS PowerPoint) and ability to use specialized software related to data management.

8. DURATION, EXPECTED DELIVERABLES AND PAYMENT TERMS

8.1. Duration of the assignment

The duration of the assignment is estimated at 75 calendar days.

8.2. Deliverables

- **Deliverable 1**: Inception report including a detailed work plan, a precise timeline, and initial guidelines for the collection and analysis of climate change data. This report is due **fifteen** (15) days after the scoping meeting with the OSS.
- **Deliverable 2**: Interim report presenting a summary of the data collected, a preliminary analysis of the impacts of climate change on SMAS groundwater resources, and an identification of missing data or gaps. This deliverable must be submitted **forty-five (45)** days after contract signing. This deliverable will be presented during a national workshop by the consultant.
- **Deliverable 3**: Final report, detailing the activities carried out, the methodologies used, the results obtained, the gaps identified and strategic recommendations for adapting to and mitigating the impacts of climate change on groundwater resources. This report must be submitted **twenty (20)** days after validation of deliverable 2.

Table 1 - **List of deliverables and deadlines**

Deliverable	Delivery dates
D1: Inception report including a detailed work plan, a precise timetable and initial guidelines for the collection and analysis of data relating to climate change.	**Fefteen (15) days** after the scoping meeting
D2: Interim report presenting a summary of the data collected, a preliminary analysis of the impacts of climate change, and an identification of gaps.	**forty-five (45) days** after the contract is signed
D3: Final report including adjustments resulting from the national validation workshop, detailing the methodologies used, data collected, gaps identified and strategic recommendations for adaptation and mitigation of the impacts of climate change.	**twenty (20) days** after the validation of **deliverables 2** and after the national workshop is held
Total	

8.3. Payment Terms

The consultant will receive a maximum lump sum of **USD 7,000** for the entire assignment. Payments will be made in two installments, as follows:

Table 2 - Payment terms

Installments	Payment terms	Amount
Installment 1	Validation by the OSS of D1: Inception report including a detailed work plan, a precise timetable and initial guidelines for the collection and analysis of data relating to climate change, and D2: Interim report presenting a summary of the data collected, a preliminary analysis of the impacts of climate change, and an identification of gaps	**50 %** of the total amount from the date of signature of the contract
Installment 2	Validation by the OSS of D3: Final report including adjustments resulting from the national validation workshop, detailing the methodologies used, the data collected, the gaps identified, and strategic recommendations for adapting to and mitigating the impacts of climate change	**50 %** after validation of deliverables 2 and after the national workshop

PN: the deadlines reserved for the validation of deliverables are not counted

9. PRESENTATION OF THE FILE

9.1. Technical proposal

- A technical proposal of no more than 5 pages containing the proposal of a succinct methodology explaining the approach, the way in which the consultancy will be carried out as well as a work plan including the various deliverables whose completion will be linked to the payment terms;
- A Curriculum Vitae setting out the level of training required and the expert's experience in consultancy or similar fields (in accordance with the standard OSS CV template which can be downloaded from the following link: [**OSS CV template**]);
- A table detailing the references relevant to the proposed expert's mission;
- Other references considered useful;
- Duly completed model declaration on honour (**Annex 2**);
- Copies of diplomas;
- Other references deemed useful.

9.2. Financial offer

The financial offer must include the following documents:

- A financial bid submission form in accordance with the form in **Annex 1**;

10. SELECTION PROCESS

The selection of bids will comprise two stages: A first stage relating to the evaluation of the technical offers followed by a second stage relating to the evaluation of the financial offer.

10.1. Technical proposal

CVs will be evaluated and compared separately and independently of any financial considerations. **It will be scored out of 100 points on the basis of the criteria set out in the table below.**

To be eligible, the candidate's technical offer must obtain **a minimum score of 70 out of 100.**

Section	Points
General qualifications/diplomas: in climatology, environment, natural resource management or a related field	15
Working methodology: clarity, structuring of steps, adequacy with deadlines and specific project objectives	15
Experience in various related fields such as national and international climate policies and measures	30
Experience in integrating climate change mitigation and adaptation measures into development interventions in West Africa, or field operations involving climate change in the region;	30
Proficiency in office automation tools (MS Word, MS Excel, MS PowerPoint) and ability to use specialised data management software	5
Language skills (French + English)	5
Total	**100**

10.2. Financial offer

The financial evaluation will concern only the bids of tenderers pre-qualified after the technical evaluation.

The financial offer scores (Nf) will be calculated as follows: Nf = 100 x Fm/F, where:

- Nf: Bidder's financial score
- Fm: Lowest financial proposal of the technically successful bids
- F: Tenderer's financial proposal

10.3. Final evaluation

Tenders will be ranked according to their overall score (NG) in accordance with the following formula: NG = [Nt x (70%)] + [Nf x (30%)]

- - NG: Overall score
- - Nt : Technical score
- - Nf: Financial score

The tender with the highest overall score (NG) will be selected.

11. SUBMISSION PROCEDURES AND DEADLINE

Tenders must be sent by e-mail to the following address: procurement@oss.org.tn mentioning the reference**: "National Consultant on climat change contributing to TDA [AC/OSS/SMAS_ Changement-Climatique/160725-27]"** in the subject line.

The deadline for receipt of tenders is August 6th, 2025 at 23:59 (Tunis time) and 22:59 (GMT).

Annex 1 - Financial proposal submission form

Tender addressed to (procurement and disposal entity) :	
Date of financial offer :	
Procurement reference number:	
Subject of the procurement:	

The total price of our offer is : _

We confirm that the prices indicated in our financial offer are fixed and firm for the period of validity and will not be subject to any revision or variation.

Financial offer authorised by:

Signature : _____ **Name** _____

Position : _____ **Date :** _____

Authorised for and on behalf of:

The consultant : _____

Signature and stamp of the consultant's legal representative

Annex 2 - Model declaration of honour

Subject of the call for tenders:

I, the undersigned (full name) : .....

Nationality: ……

Acting in the capacity of: …….

Company name: …… ……

Address : ……

Registered in the Commercial Register under n° .....the .....at.....

Fiscal number: ……

- **I declare on my honour:**
  1. I have never been in receivership and have never been the subject of any legal proceedings on any grounds whatsoever,
  2. I undertake not to resort, either personally or through an intermediary, to practices that could be described as embezzlement, fraud or corruption in the various procedures for the award, management and performance of this contract,
  3. in the event that my tender is selected, to respect the procedures in force at the OSS and the obligation of reserve and professional secrecy for all facts and/or information that I may come to know,

- **Certify** the accuracy of the information contained in this declaration on my honour and in the documents provided in my tender.
- **Certify** that I am not related to any person receiving any remuneration whatsoever from the OSS
- **Acknowledge** that I am aware that any inaccuracies or errors and any shortcomings that may be found in the content of my offer, as well as any failure to comply with the conditions of participation, will result in my application being rejected.

Done at.....the.....

Signature and stamp of the consultant's legal representative