



**SMAS**  
Renforcer la gestion durable du système aquifère sénégal-mauritanien  
pour assurer l'accès à l'eau des populations confrontées  
au changement climatique

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

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### **TERMS OF REFERENCE**

Recruitment of a national environmental consultant  
contributing to the Transboundary Diagnostic Analysis (TDA)  
for groundwater in the national portion of the Senegal-  
Mauritania Aquifer System (SMAS)  
*(Gambia, Guinea Bissau, Mauritania and Senegal)*

[AC/OSS/SMAS\_Environnementaliste/160725-28]

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## 1. CONTEXT AND RATIONALE

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<sup>1</sup> 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)<sup>2</sup>, 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)<sup>3</sup>, the Senegal River Basin Development Organization (OMVS)<sup>4</sup> 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 conducted to identify the main challenges and opportunities related to the sustainable management of the Senegal-Mauritania Aquifer System (SMAS). This TDA will provide an essential technical basis for developing the SMAS Strategic Action Program (SAP).

To inform the regional TDA, national TDAs will be developed in each participating country (Gambia, Guinea-

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<sup>1</sup> 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

<sup>2</sup> Senegal-Mauritania Aquifer System: Acronym reserved for the project financed by the GEF

<sup>3</sup> Gambia River Basin Development Organization (OMVG)

<sup>4</sup> Senegal River Basin Development Organization (OMVS)

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 environmental consultant to contribute to the TDA for groundwater in the SMAS.

## **2. PURPOSE OF THE CONSULTATION**

The mission aims to produce an in-depth analysis of the environmental dynamics and impacts related to groundwater resources in the Senegal-Mauritania Aquifer System (SMAS), namely:

- Strengthening the understanding of the environmental impacts of transboundary issues on ecosystems and environmental services associated with groundwater resources;
- Identifying major environmental pressures and critical areas requiring priority interventions to preserve resources and ecosystems;
- Conducting an economic analysis of environmental goods and services to quantify their value and demonstrate the benefits of sustainable management;
- Proposing strategic recommendations for sustainable and resilient groundwater resources management, integrating environmental and economic dimensions.

## **3. RESPONSIBILITIES AND DUTIES OF THE CONSULTANT**

Under the supervision of the project coordinator based at the OSS, the national environmental consultant will work closely with national stakeholders and other project experts and will be responsible for:

- Collecting and analyzing existing documents related to the SMAS project, including previous reports and relevant studies on the Senegal-Mauritania aquifer system, as well as the Senegal and Gambia river basins;
- Collecting and analyzing documents developed as part of the Regional Working Group (RWG) efforts on improving knowledge and managing SMAS water resources;
- Analyzing national reports prepared by members of the National Inter-ministerial Committee, related to SMAS transboundary groundwater resources;
- Conducting, at the national level of the Senegal-Mauritania Aquifer System (SMAS), considering, as much as possible, the Senegal and Gambia river basins, an analysis of the environmental impacts of each of the major transboundary risks identified by the members of the National Inter-ministerial Committee on the SMAS transboundary aquifers;
- Reviewing documents and reports from similar projects or initiatives, with a particular focus on environmental analyses of transboundary issues, ecological data and approaches to sustainable natural resources management;
- Conducting an analysis of environmental goods and services at the national level of the Senegal-Mauritania Aquifer System (SMAS), with the aim of preventing, reducing and eliminating the major transboundary risks identified, while preserving and maintaining natural resources, particularly groundwater, in order to prevent their depletion;
- Mapping the major issues by describing the geographical extent of the environmental impacts, the critical foci associated with transboundary issues, as well as the scale of the national portion of the Senegal-Mauritania Aquifer System (SMAS);
- Proposing appropriate recommendations for sustainable and resilient management of groundwater resources, integrating environmental dimensions and local and transboundary ecological dynamics;
- Present the thematic report at a national validation workshop.

## 4. EXPECTED RESULTS

- An in-depth understanding of environmental impacts, highlighting transboundary issues and their effects on ecosystems and environmental services associated with the SMAS groundwater resources;
- The identification of major environmental pressures and critical areas requiring priority interventions to preserve natural resources and vulnerable ecosystems;
- A mapping of environmental issues, highlighting the geographic extent of the impacts, critical areas and hotspots associated with transboundary issues;
- An economic analysis of environmental goods and services, quantifying their value and demonstrating the benefits of sustainable management to support strategic decisions;
- Tailor-made strategic recommendations for sustainable and resilient groundwater resources management, integrating environmental and economic dimensions;
- A consolidated national thematic report, integrating the results of the analyses, the identified critical areas and recommendations to guide sustainable management strategies for the SMAS groundwater resources.

## 5. METHODOLOGY

The consultant will have to follow a precise and structured methodology, focused on two main stages:

### 5.1. Analysis of environmental impacts

The purpose of this step is to examine the environmental impact of each major priority transboundary issue. Not to confuse with an Environmental Impact Assessment (EIA), which is a tool for identifying and assessing the potential environmental impacts of a proposed project.

A logical approach to promote this process is the development of robust and relevant environmental status, impact and pressure indicators for which data are available.

These indicators will have several uses.:

- **Status indicators** are used to describe physical and geographic characteristics, socioeconomic status and environmental status;
- **Impact indicators** describe and quantify the impacts of each transboundary issue; it is recommended to collect information from the last 10 or 20 years if possible;
- **Pressure indicators** explain the causal chains developed to address priority transboundary issues.

At the end of the analysis of each transboundary risk, the consultant will have to suggest the actions to be undertaken (or the strategy(ies) to be developed) to reduce the corresponding transboundary risk.

### 5.2. Economic valuation of environmental goods and services

For a Transboundary Diagnostic Analysis (TDA) to be effectively conducted and a Strategic Action Program (SAP) designed, it is essential to have an estimate of the economic value of the environmental goods and services associated with the Senegal-Mauritania Aquifer System (SMAS).

The resulting thematic report will serve as a key reference in the SAP development stages, providing a solid basis for informed decisions on the allocation of financial resources. This economic valuation of environmental goods and services will also help demonstrate the benefits of sustainable groundwater resources management, calling the participating countries to invest in the priority actions identified in the SAP, while ensuring a positive return on their investment.

Finally, the consultant will integrate these steps into a participatory approach. This involves close collaboration with national and local stakeholders, including the National Inter-ministerial Committees, the Regional Working Group (RWG), and other thematic consultants involved in the project. The methodology must be explicitly detailed in the offer, specifying the tools and techniques used, the stages of data collection and analysis, as well as the consultation and validation mechanisms to guarantee usable results that comply with the objectives of the SMAS project.

## 6. PROFILE AND QUALIFICATIONS OF THE CONSULTANT

### 6.1. Training and academic level

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

### 6.2. Experience and skills required

- The candidate must have at least 10 years' experience in environmental studies related to groundwater management, particularly in West Africa. He/she must be proficient in transboundary environmental impact assessment, integrate gender and social inclusion aspects, and propose appropriate strategic solutions;
- A good knowledge of participatory approaches, stakeholder management and integrated water resources management is essential. Experience in areas similar to the SMAS project is an advantage;
- The candidate must be able to carry out environmental mapping and write clear technical reports in French or English;
- Finally, proficiency in office automation tools and environmental mapping and analysis software is required. Expertise in the economic evaluation of environmental services would be a plus.

## 7. DURATION, EXPECTED DELIVERABLES AND PAYMENT TERMS

### 7.1. Duration of the assignment

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

### 7.2. Deliverables

- **Deliverable 1:** Inception report including a detailed work plan, a precise timeline and initial guidelines for the collection and analysis of environmental 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 assessment of the environmental impacts of transboundary issues on the SMAS groundwater resources, an analysis of potential mitigation measures and an economic valuation of environmental goods and services. This report must also identify gaps or missing data. This deliverable must be submitted **forty-five (45)** days after signing the contract. This report will be presented at 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 sustainable and resilient management of the SMAS groundwater resources. This report must include in-depth analyses and proposals for improvement for future interventions. This deliverable must be submitted **twenty (20)** days after the validation of deliverable 2.

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

Deliverable	Delivery dates
<b>D1:</b> Inception report including a detailed work plan, a precise timetable, and initial guidelines for the collection and analysis of environmental data	<b>Fifteen (15) days</b> from the date of signature of the contract
<b>D2:</b> Interim report presenting a summary of the data collected, a preliminary assessment of environmental impacts, an analysis of mitigation measures, as well as an identification of gaps and missing data	<b>Forty-five (45) days</b> from the date of signature of the contract
<b>D3:</b> Final report including adjustments resulting from the national validation workshop, detailing the methodologies used, data collected, gaps identified, an economic valuation of environmental goods and services, as well as strategic recommendations for sustainable and resilient management of groundwater resources.	<b>Twenty (20) days</b> after the validation of <b>deliverables 2</b> and after the national workshop is held
<b>Total</b>	

### 7.3. Payment Terms

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

**Table 2** - Payment terms

Installments	Payment terms	Amount
<b>Installment 1</b>	Validation by the OSS of <b>Deliverable 1</b> (Inception Report) and <b>Deliverable 2</b> (Interim Report including preliminary analyses, summary of environmental data, and preliminary impact assessment)	<b>50 %</b> of the total amount of the contract
<b>Installment 2</b>	Validation by the OSS of ( <b>Deliverable 3</b> ): the final report including adjustments resulting from the national validation workshop	<b>50 %</b> of the total amount of the contract

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

## 8. PRESENTATION OF THE FILE

### 8.1. 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.

### 8.2. Financial offer

The financial offer must include the following documents:

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

## 9. 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.

### 9.1. 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
<b>General qualifications</b> /diplomas: in the environment, natural resource management, environmental economics or a related field	15
Work methodology: clarity, structuring of the stages, adequacy with the deadlines and specific objectives of the project	15
Experience in environmental studies related <b>to groundwater management</b> , particularly in <b>West Africa</b> , and in assessing the environmental impact of transboundary issues, especially in the context of integrated management of aquifer systems and river basins	30
Good knowledge of participatory approaches, stakeholder management and integrated water resources management is essential; Practical experience in SMAS project areas or similar contexts, with an understanding of local and regional dynamics.	30
Proficiency in office automation, mapping and environmental analysis software	5
Language skills (French + English)	5
<b>Total</b>	<b>100</b>

## 9.2. 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:  $Nf = 100 \times Fm/F$ , where:

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

## 9.3. Final evaluation

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

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

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

## 10. SUBMISSION PROCEDURES AND DEADLINE

Tenders must be sent by e-mail to the following address: [procurement@oss.org.tn](mailto:procurement@oss.org.tn) mentioning the reference: **“National Consultant environmentalist contributing to TDA [AC/OSS/SMAS\_Environnementaliste/160725-28]”** in the subject line.

The deadline for receipt of tenders is August 6<sup>th</sup>, 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

<b>Subject of the call for tenders:</b>
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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