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DEPARTMENT OF ECONOMIC AFFAIRS AND AGRICULTURE

DIRECTORATE OF THE ENVIRONMENT AND NATURAL RESOURCES (DoERN)

REGIONAL PROGRAMME FOR THE INTEGRATED DEVELOPMENT OF THE FOUTA DJALLON HIGHLAND

TERMS OF REFERENCE FOR THE RECRUITMENT OF AN INDIVIDUAL CONSULTANT TO PROVIDE SUPPORT FOR THE STUDY AND DESIGN OF A GEOPORTAL FOR THE REGIONAL OBSERVATORY FOR NATURAL RESOURCES AND CLIMATE OF THE FOUTA DJALLON HIGHLAND ORRNC-MFD)

September 2025

1. CONTEXT AND JUSTIFICATION

The Fouta Djallon Highland, which covers 120,000 km2, is a huge reservoir of biological diversity that must be protected and preserved, as it is home to many plant and animal species, some of which are considered endemic and require special protection. The Highland also contains significant mineral resources. This cross-border area is undergoing accelerated degradation of its natural resources as a result of natural actions and human interventions, in particular i) traditional practices of shifting agriculture on burnt land; ii) excessive logging; ii) accelerated soil erosion; iv) reduction in flora and fauna species; v) increased water runoff; and vi) the cumulative effects of climate change, etc.

This degradation threatens not only the balance of the Fouta Djallon Highland's ecosystems, but also the livelihoods of the populations, particularly women, who are heavily dependent on natural resources for their agricultural and daily activities.

The Regional Observatory for Natural Resources and Climate (ORRNC) of the Fouta Djallon Highland (MFD) aims to monitor and assess the state of the Highland's natural resources and climate with a view to sustainable development.

The Observatory is a component and one of the main outputs envisaged in the Regional Integrated Action Programme for the Fouta Djallon Highland (PRAI-MFD). This programme was designed by the Organisation of African Unity (OAU) in 1981 to ensure the protection of the environment and the development of the natural resources available in the Fouta Djallon Highland. Management of the PRAI-MFD was officially transferred to ECOWAS in 2018. The Programme Coordination Unit (PCU), responsible for coordinating and implementing the PRAI-MFD, was established in November 2022. With a view to establishing the observatory, an action plan was drawn up in 2009 by the International Coordination Bureau (ICB) of the African Union (AU). This document remains a working basis. It will need to be updated to incorporate new issues related to climate change and groundwater management, among others, as well as to achieve the vision and strategic objectives of ECOWAS (e.g. ECOWAS Vision 2050) and its partners. In addition, the institutional and organisational framework of the observatory had been defined, notably with the establishment of an Observatory Unit within the UCP attached to the Directorate of Environment and Natural Resources. Furthermore, it was planned that the observatory would rely on a network of partners, primarily including the eight member countries of the Convention of States bordering the Fouta Djallon Highland (Gambia, Guinea, Guinea-Bissau, Mali, Mauritania, Niger, Senegal, Sierra Leone) as well as organisations involved in the development of rivers originating in the Fouta Djallon Highland, in particular i) the Organisation for the Development of the Senegal River (OMVS), ii) the Organisation for the Development of the Gambia River (OMVG), the Niger River Basin Authority (ABN), and the Mano River Union Basin Authority (ABMRU). Each institution is represented by a National Focal Point (NFP) which liaises with data producers in its territory.

To support the Observatory's activities, ECOWAS plans to set up a **geoportal-type platform** to collect, store, analyse, validate, exploit and promote data relating to indicators on the environment and natural resources, hydrology, climate and human activities in the Fouta Djallon Highland. This Geoportal will be designed to be a true Integrated Reference Information System, as it will be responsible for the exchange of geospatial information, the storage of data and indicators, and the visualisation of final products within a cartographic interface and dashboards.

These TOR specify the stages, objectives and expected results (deliverables) of the study for the implementation of this Geoportal.

2. PROGRAMME OBJECTIVES

The objective of this Programme is to: Ensure the protection and rational use of the natural resources of the Highland and its areas of influence in order to contribute to improving the living standards of the population living in the highlands and sub-basins of the Programme's member countries by reversing the trend of resource degradation.

Specifically, the Programme has the following objectives:

- Establish a regional framework and mechanism to bring together all initiatives that contribute to the preservation of the resources of the Fouta Djallon Highland and its dependencies;
- Establish a regional monitoring and evaluation framework by operationalising the MFD Regional Observatory for Natural Resources and Climate (ORRNC-MFD)
- Establish a regulatory framework for data management and strengthen institutional capacities for cooperation between all stakeholders (OB, countries, NGOs, etc.)
- Improve the coordination of IWRM activities and sustainable management of ecosystems and biodiversity at the transboundary basin level.
- Establish a regional mechanism for the sustainable financing of the Fouta Djallon Highland's natural resources and climate preservation system and activities

3. CONSULTANT'S MISSION

The Regional Observatory for Natural Resources, Environment and Climate of the Fouta Djallon Highland (ORRNC) was designed as one of the main structures of the Regional Integrated Development Programme of the Fouta Djallon Highland by the International Coordination Office of the African Union.

The transfer of the programme to ECOWAS in 2018 and the establishment of the PRAI-MFD Coordination Unit in November 2022 place the Fouta Djallon Highland Observatory at the heart of the programme and constitute a main pillar and a multi-stakeholder decision-making tool for the preservation, monitoring and management of the natural resources and climate of the Fouta Djallon Highland.

Its main mission is: i) to ensure the general and continuous monitoring of the state of natural resources and the environment of the Fouta Djallon Highland throughout its sub-regional dimension; ii) to serve as a privileged tool for cooperation and collaboration for the sustainable management of shared lands and resources of all riparian states of transboundary rivers originating in the Fouta Djallon Highland, based on its products and results; iii) to serve as a privileged framework for consultation between the various stakeholders in the Fouta Djallon Highland in the field of monitoring and evaluation of natural resources.

To make it operational, the Coordination Unit plans to engage the services of an expert to assist it in carrying out the study and designing a geoportal, the implementation of which is based on two main components:

- **A natural resource monitoring and evaluation system** to measure changes in the state of ecosystems and resources.
- **Environmental monitoring** to anticipate the effects of changes, detect impacts, generate alerts and guide adaptation and management actions.

This commission responds to an operational need to set up a geoportal and covers all Fouta Djallon Highland countries, including the basins. To this end, the consultant's main task is **to design and implement a strategy and methodology for the establishment and**

implementation of a fluid and easily accessible iterative platform for data on natural resources and climate in the Fouta Djallon Highland.

4. MISSION OBJECTIVES

The creation of the ORRNC requires an analysis of data flows between institutions, an assessment of the volume of data to be capitalised on according to indicators, and an in-depth understanding of the needs of the various stakeholders involved with regard to the future Geoportal.

The overall objective of the mission is to carry out the preliminary studies necessary for the development and operationalisation of a Geoportal. These studies will cover the following elements:

- An inventory of already defined indicators and available data.
- Mapping of data flows between the stakeholders involved.
- The definition of technical specifications governing data exchanges to ensure their quality, consistency and interoperability with existing national or regional systems.
- Modelling of a pilot database.
- The prototyping of a data exchange platform enabling focal points to submit their raw data and indicators.

These activities will lay the functional and technical foundations for a future information system enabling monitoring, evaluation and environmental surveillance of the natural resources of the Fouta Djallon Highland.

Specifically, the consultant will be responsible for:

- Conducting a comprehensive assessment of available data and stakeholders
- Analysing, modelling and designing the data flows necessary for the proper functioning of the Geoportal. This includes both incoming flows (from data producers) and outgoing flows (to end users and stakeholders)
- Design a coherent and centralised organisation of data sets to ensure their accessibility, validation and exploitation.
- Practically test the modelled data flows, file organisation, and methodology for storing raw data and indicators. This OS will focus on a subset of indicators defined by the PRAI-MFD Coordination Unit
- Analyse infrastructure and functionality requirements, and prototype the priority modules of the Geoportal, namely the data exchange platform and the graphical interface for viewing validated information.

5. EXPECTED RESULTS

The main results expected from this mission are:

i) A diagnostic report on data and stakeholders, including:
  - An inventory of available data and requirements with metadata and specifications
  - Analysis of functional requirements and use cases for the future Geoportal
  - Analysis of requirements and inventory of satellite data for environmental monitoring and recommendations for acquisitions
  - A technical report on available infrastructure: tools, existing observatories, operational capabilities.

- A list of stakeholders, their missions, roles and responsibilities, as well as recommendations on the human resources to be mobilised for the management and maintenance of the Geoportal.

ii) A report on data flows including:
- Mapping of incoming and outgoing data flows with graphical representation.
- Specifications for exchanges between partners and the Observatory Unit
- Model of optimised flows and integration of interoperability levels with existing systems.

iii) **A report on the organisation of data** and the pilot database:
- Proposal for centralised organisation and a system for archiving raw data sets
- Conceptual model of a pilot database including raw data and validated indicators.
- Conceptualisation of semi-automatic methods for calculating pilot indicators: methodologies and parameters.

iv) **A report on the testing and validation of pilot indicator flows, including:**
- Report on the testing of data flows for a subset of indicators and pilot countries
- Validation report on collection, processing and storage methodologies.
- Recommendations for wider implementation.

v) **A prototype and technical specifications for a functional geoportal offering intuitive access to data and analysis tools, including**:
- The Geoportal, a data exchange platform with validation features.
- Technical documentation of specifications for the platform and tools, including a list of technical and IT equipment for the operationalisation of the Observatory

vi) A final report is available on the study and design of a Geoportal for the Regional Observatory of Natural Resources and Climate of the Fouta Djallon Highland.

6. CONSULTANT PROFILE

6.1. Qualifications for the assignment

The ideal candidate is a senior expert with a five-year university degree in databases and information systems related to environmental, natural resource, hydrological and climate issues or other relevant fields.

6.2. Professional experience

The consultant must have at least 10 years of specific professional experience in data governance and management, as well as multi-stakeholder information systems.

6.3. Specific experience relevant to the consultancy

He/she must:

- Have at least two (2) similar references in the implementation, modelling and management of databases and relational information systems related to natural resources and climate.
- Have a thorough understanding of aspects relating to data collection, flows and exchange with information-holding structures, particularly in the context of West Africa.
- Have experience and skills in GIS and data transformation platforms.

- Have at least one experience in defining monitoring and evaluation indicators for the environment, water and climate in countries and/or basin organisations.
- Have knowledge and familiarity with standards (OGC, ISO) and best practices to ensure interoperability between systems.
- Have at least one experience in conducting technical training related to database and GIS management.
- Demonstrate experience in the water, environment and natural resource monitoring sectors.

6.4. Language skills

The individual consultant must be fluent in English or French or Portuguese (reading, writing, speaking). Working knowledge (reading, writing, speaking) of the other official language(s) of ECOWAS (English, Portuguese or French) would be an asset.

7. SELECTION PROCEDURE

The consultant will be selected in accordance with the selection procedure for individual consultants, in accordance with the ECOWAS procurement code in force.

8. DURATION AND TERMS OF THE ASSIGNMENT

The assignment will cover a period of **eight (8) months** from the date of signature of the contract. The consultant will work closely with the Coordination Unit and, where necessary, with the Programme's stakeholders, the institutions concerned with the Fouta Djallon Highland, in particular the Basin Organisations (ABN, OMVS, OMVG, ABMRU, ABCBT and the Member Countries of PRAI-MFD.

9. PLANNING AND EXPECTED DELIVERABLES OF THE MISSION

The products and deliverables expected at the end of the Consultant's mission should **provide** the Coordination Unit with a technical diagnostic document on the data and on the design and implementation of a Geoportal for the Regional Observatory of Natural Resources and Climate of the Fouta Djallon Highland. The deliverables are presented within the deadlines indicated in the table below.

Table showing deliverables and production deadlines

Specific objectives	**Deliverable**	**Estimated man-days**	**Delivery deadlines**
Start of assignment	**A kick-off report**, framework, validation of terms of reference and meetings with partner organisations	**7 hours/day**	0.5 months
Diagnosis of available data and stakeholders	- **Data and stakeholder assessment report including the** following **deliverables**: - Inventory of available data and requirements with metadata and specifications - Analysis of functional requirements and use cases for the future Geoportal - Analysis of requirements and inventory of satellite data for environmental monitoring and recommendations for acquisitions - Technical report on available infrastructure: tools, existing observatories, operational capabilities.	**18 hours/day**	1.5 months from validation of the kick-off report

Specific objectives	Deliverable	Estimated man-days	Delivery deadlines
	- List of stakeholders, their missions, roles and responsibilities, as well as recommendations on the human resources to be mobilised for the management and maintenance of the Geoportal		
Design of data flows,	**A report on data flows including**: - Mapping of incoming and outgoing data flows with graphical representation. - Specifications for exchanges between partners and the Observatory Unit - Model of optimised flows and integration of interoperability levels with existing systems.	**10 hours/day**	1 month from validation of the data diagnostic report
Organisation of data and pilot database	**A report on the organisation of data** and the pilot database: - Proposal for centralised organisation and a system for archiving raw data sets - Conceptual model of a pilot database including raw data and validated indicators. - Conceptualisation of semi-automatic methods for calculating pilot indicators: methodologies and parameters.	**10 hours/day**	1 month from validation of the Data Flow Report
Testing and validation of flows and pilot indicators	**A report on the testing and validation of pilot indicator flows,** including - Test report on data flows for a subset of pilot indicators and countries - Report on the validation of collection, processing and storage methodologies. - Recommendations for wider implementation.	**8 hours/day**	1 month from validation of the report on data organisation
Prototyping and technical specifications	**A functional geoportal offering intuitive access to data and analysis tools,** including: - The Geoportal, a data exchange platform with validation features. - Technical documentation of specifications for the platform and tools, including a list of technical and IT equipment for the operationalisation of the Observatory	**_12 hours/day**	1 month from validation of the report on the testing and validation of pilot indicator flows
End of the Consultant's assignment	**A final report with the delivery of the following materials**: - Presentation materials containing comprehensive technical documentation on system use and maintenance - Final mission report - Workshop reports - DAO (TDR) for the implementation of ORRNC components: production database, functional exchange platform and visualisation interfaces (Geoportal).	**10 hours/day**	2 months from validation of the report on the functional Geoportal
Total	-	**75 hours /day**	8 months

10. COMPOSITION OF SUBMISSION FILES

Candidates must submit their expressions of interest consisting of:

- Letter of submission.
- Copy of the required diploma
- A detailed, dated, updated and signed CV of the candidate, clearly highlighting the mandates carried out in connection with this assignment.
- Proof of the information and statements contained in the CV, attestations, certificates, cover pages and signatures of similar contracts successfully completed
- Understanding of the TOR, interpretations and amendments, if applicable.
- Working methodology and schedule for carrying out the assignment.

Candidates must submit their application files in a single sealed envelope marked **"Recruitment of an Individual Consultant for the study and design of a Geoportal for the Regional Observatory of Natural Resources and Climate of the Fouta Djallon Highland (ORRNC-MFD)"** to the Office of the ECOWAS Resident Representative, Minière, Corniche Nord, Rue D1.777, Commune de Dixinn. BP: 4144 Conakry, or send by email to:jbazoun@ecowas.int with a copy to the following email addresses: sbangoura@ecowas.int, ikkamara@ecowas.int, and ykoffi@ecowas.int, specifying the job title in the subject line of the email before the deadline of **14 October 2025 at 10:00 am.**