



ECOWAS COMMISSION
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Original

Selection of an Individual Consultant to develop a data model for optimal use of ECOWARN event data for risk evaluation

TERM OF REFERENCE

1. Background

The ECOWAS Early Warning and System (ECOWARN) has in its database over million entries of incident and situation data related to human security. An average of hundred thousand entries of data is added every year. This data is analysed and informs the ECOWAS Community of policy direction and responses to prevent and manage incidences that may at the extreme lead to the likelihood of conflicts within the region.

The volume and dynamic nature of these data requires a large sheer of technical assessment, both manual and technological for proper analysis. Currently, a portion is done via manual/ visual perusal of the data and consequently increases the time it takes for analysis to be completed to address emerging threats.

The EWS was established under Chapter IV of the 1999 ECOWAS Protocol Relating to the Mechanism for Conflict Prevention, Management, Resolution, Peacekeeping and Security. The Early Warning Directorate (EWD) coordinates the EWS formally known as the ECOWAS Warning and Response Network (ECOWARN). The activities of the EWD include collecting open-source information largely based on 55 pre-defined regional peace and security indicators and 42 types of events, analysing, and submitting timely reports with recommendations to ECOWAS management through the Office of the Vice President for action.

Data collected and analysis done within the EWS is categorised under five sectorial themes. These are:

1. Governance & human rights,
2. Security including terrorism and violent extremism,
3. Crime,
4. Health
5. Environment.

The EWD Analysts and ECOWARN Field Reporters are tasked with undertaking minute-by-minute information sourcing within this context as well as other relevant developments related to situations within the ECOWAS region.

Situation report Data collected based on the 55 predefined indicators by field monitors thru ECOWARN allows risk generation for the five sectorial themes and a global risk for each ECOWAS country.

- **Field Monitor Ratings**

- Current Status during the immediate past fortnight, from good to bad
- Escalation Potential expected over the next fortnight, from low to high
- Response Adequacy during the immediate past fortnight, from adequate to inadequate
- At Risk Groups identified as boys, girls, men, women, elder men, elder women, differently abled

- **Calculated Risk Scores**

- Raw Risk = *impact* (current status) “times” *likelihood* (escalation potential)
- Mitigated Risk = Raw Risk “minus” response adequacy

Certain/ Imminent	Low	Medium	High	Critical	Critical
Very Likely	Low	Medium	High	High	Critical
Likely	Negligible	Low	Medium	High	High
Moderately Likely	Negligible	Low	Low	Medium	Medium
Unlikely	Nil	Negligible	Negligible	Low	Low
 Likelihood RISK  Impact	Negligible •No serious injury. •Minimal loss or damage to assets. •No delays to programmes.	Minor •Minor injuries. •Some loss or damage to assets. •Some delays to programmes.	Moderate •Non-life threatening injury. High stress event. •Loss or damage to assets. •Some programme delay or disruption.	Severe •Serious injury •Major destruction of assets. •Severe disruption to programmes.	Critical •Death or Serious Injury. •Complete destruction or total loss of assets. •Closure of programmes or projects.

2. Benefits to ECOWAS

The EWD performs its function within the ECOWAS Peace and Security Architecture (EPSA) and the ECOWAS Conflict Prevention Framework (ECPF). Adequate data analysis is therefore required to enable and maintain the environment. The EWD Analysis Division has the lead responsibility for ECOWARN and open-source information analyses, including tracking the trends manifested in field and media reports, all integrated with regular assessments of their structural contexts. These analyses are conducted at multiple levels as dictated by the conflicts from local to national to regional.

The response component of the ECOWAS Peace and Security Architecture, which was previously centralized at the regional level, has been decentralized through the establishment of National Early Warning and Response Centres in the Member States. Eleven centres are currently fully functional in Mali, Burkina Faso, Liberia, Guinea Bissau, Cote d'Ivoire, Sierra Leone, Niger, Nigeria, The Gambia, Guinea and Ghana. It is expected that, Togo, Benin, Senegal and Cabo Verde will be opened soon.

The National Centres are part of the overall regional early warning and response mechanism to enhance 'proximity policing' and early response at local and national levels, and minimize the inertia associated with the current over centralized regional response mechanism.

3. Goal and Objectives

The EWD has spent several years consolidating data collection, created baseline data and enhanced critical capacities such as ECOWAS Regional Conflicts Systems (2008-

2012), 10 Year Evaluation of ECOWARN (2013), Medium Term Strategic Plan MTSP (2022-2026), and the Country Risk and Vulnerability Assessments (CRVA).

The next phase projected is simply to optimize the use of the data and focus its use to align with the vision of Regional Economic Area and a Common Community with shared social values. The EWD is therefore seeking to recruit a consultant to develop a risk calculation model using event data collected thru ECOWARN.

3.1. Expected Outcome

The outcome of the consultancy is:

- A mathematical model for the risk calculation, validated by EWD
- A software and script that will be integrated to the existing ECOWARN Reporter and its database; The current system is developed using ASP and MS SQL database.
- Analytical add-ons Machine learning (artificial intelligence) tool for ECOWARN horizon scanning and forecasting
- Training for EWD staff on the tool developed

4. Methodology

The methodology for developing the tool involves a series of systematic steps aimed at ensuring the tool is comprehensive, accurate, and reflective of the diverse human security conditions across the ECOWAS region. The approach includes the following key phases:

- Suggestion of a mathematical risk calculation model using ECOWARN human security event data by the consultant,
- Validation of the model by EWD
- Development of the web based tool by the consultant
- Validation of the tool by EWD
- Training of EWD staff by the consultant.

5. Deliverables

The consultant will deliver the following outputs:

- Develop the mathematical model for the risk calculation, develop the software and script that will be integrated to the existing ECOWARN Reporter and its database; The current system is developed using ASP and MS SQL database.
- Develop analytical add-ons Machine learning (artificial intelligence) tool for ECOWARN horizon scanning and forecasting
- Train EWD staff on the tool developed

6. Roles and Responsibilities

Role	Description
ECOWAS	Funding
ECOWAS Early Warning Directorate	Guide the consultant, Organise the validation of the tool
Consultant	Develop the solution and the training package

7. Reporting Lines and Communication

7.1.1. Reporting Requirements

The Consultant will submit weekly progress reports to the Project coordinator within the Early Warning Directorate, and adjustments made to the project plan.

The Consultant will work under the line authority of the project coordinator. A final report will be submitted after the project, detailing all activities undertaken, results achieved, and recommendations for future updates of the tool.

7.1.2. Communication Plan

Regular internal meetings will be held to coordinate activities, discuss challenges, and ensure alignment with project objectives.

Regular updates will be provided to the project implementation team, to keep them informed of progress and gather input.

7.1.3. Budget and Resources

The budget and resources required for the mission will cover costs related to technical expertise, travel, workshops, and capacity-building activities.

8. Qualifications, experience, competence

ECOWAS is looking for an Individual consultant. He/she will provide technical support to the EWD. The Consultant will provide expertise in risk calculation, statistical analysis, and software development.

8.1.1. Qualifications

The consultant must hold at least a master's degree in statistics, Data Analysis, Data Management, or a similar field from a recognized University.

8.1.2. Experience and Competence

The consultant must:

- Have ten (10) years' experience in, mathematical model, statistics, IT system development, web-based systems and programming, and good knowledge of Microsoft SQL Server, ASP, PHP etc.
- Possess a sense of organization and good skills in communication, synthesis, and drafting.
- Knowledge of software development and database, quantitative data collection methods.
- Possess a sense of organization and good skills in communication, synthesis, and drafting.
- Possess an excellent skill in technical drafting, and more specifically regular reporting in accordance with the requirements of the project's Donor and other technical and financial partners.
- Possess a good knowledge of data-processing tools.
- Perfect knowledge of at least one ECOWAS working language.
- Familiar with a multicultural work environment.
- Broad knowledge of ECOWAS Early Warning System and deliverables.
- Demonstrated expertise in conducting similar development.
- Excellent aptitudes in analysis, report writing, and communication.

9. General conditions

9.1. Place, duration, and beginning of the mission

- The project is based in the Early Warning Directorate, ECOWAS Commission, Abuja, Nigeria
- The beginning of the mission is envisaged for March 2026, for 90 days maximum.
- The Consultant shall abstain from any situation that could be considered a conflict of interest within the framework of the mission.

9.2. Application Package

The application package should include:

- A signed Expression of Interest,
- A detailed Technical Proposal including, the Consultant's recent Curriculum Vitae providing details on professional experience and similar missions, a certified copy of the minimum diploma required, and evidence of conducting similar development in the past.
- A detailed Financial Proposal.

9.3. Submission of applications

Applications should be received at the latest on **November 20, 2025, at 11:00 am, Nigerian time (GMT+1)** by the ECOWAS Procurement Division at the following address:

- **ECOWAS Commission**, 101 Yakubu Gowon Crescent, Asokoro District, PMB 401, Abuja 900103, Federal Capital Territory, Federal Republic of Nigeria
- Or by email at the following addresses: sbangoura@ecowas.int, With the following in copy (cc): ikkamara@ecowas.int; mbossou@ecowas.int; yderra@ecowas.int.

9.4. Method of selection

A Consultant will be selected in accordance with the ECOWAS Procurement Code (selection of individual consultants).