

Terms of Reference - LA-DK0-00484

Professional services CONSULTANCY

Consultancy for advanced analysis, development of experimental predictive models, analysis of historical time series and support for the definition of alert thresholds for the Pastoral Early Warning System - PEWS.

1. GENERAL PROJECT INFORMATION

Field	Description
Project name	Strategic alliances for anticipatory action in response to food and pastoral crises in the Sahel.
Project code	SNJFAG
Funding	Generalitat de Valencia
Contracting entity	ACF Foundation
Country / region of intervention	Senegal, with a regional projection across the Sahel / West Africa
Coordinating entity	ACF Senegal
Actors involved in technical coordination	ACF Senegal, ACF Regional Office for West Africa - ROWCA and SensingTools
Type of service	Specialized consultancy in data science, predictive modelling, remote sensing, time series and methodological support for early warning systems
Contracting modality	Consulting firm or specialized technical team
Estimated duration	To be defined according to the final project schedule

2. BACKGROUND AND CONTEXT

ACF has experience in the development, improvement and use of information systems for food security, early warning, anticipatory action and humanitarian decision-making. In different regions, the organization has promoted initiatives aimed at improving the quality, timeliness, granularity and operational usefulness of available data in order to anticipate food and nutrition crises, guide more effective responses and strengthen coordination between humanitarian actors, public institutions, academic entities and technology partners. In the Sahel, one of ACF's most relevant experiences is the Pastoral Early Warning System - PEWS, a pastoral early warning system that combines data from sentinel sites, community information, pastoral indicators, climate data, satellite products and technical analyses to monitor the evolution of factors affecting food security and pastoral livelihoods. PEWS has progressively become a reference tool for monitoring pastoral conditions in vulnerable areas of the Sahel, feeding information products, bulletins, maps and visuals associated with GEOSahel.info and SIGSahel.info.

PEWS draws in particular on data related to pasture and biomass availability, burned areas and the filling status of surface water points, all generated from satellite sources, as well as field information regularly collected from pastoral sentinel sites. However, the increasing complexity of potential humanitarian crises

in the Sahel requires progress towards more coherent integration of information sources, stronger automated analysis capacity, better visualization tools and the gradual incorporation of predictive models to anticipate significant deterioration before it turns into severe humanitarian crises. In addition, ACF has collaborated with entities such as the University of Granada (UGR) on other initiatives for innovation applied to information systems, including PREDISAN Sahel, funded by the Andalusian Agency for International Development Cooperation (AACID). This project has helped advance the use of satellite information, vegetation indices, anomaly analysis and prediction models, particularly nowcasting approaches.

These experiences are complemented by lessons learned from ECHO-supported initiatives around the Conflict and Hunger project, which have helped strengthen ACF's capacity to analyse interactions between insecurity, displacement, access restrictions, deterioration of livelihoods, availability of natural resources and food security. Each of these initiatives has generated tools, platforms, visuals, databases or methodologies that represent a relevant technical asset, but that need to evolve towards greater interoperability, stronger methodological coherence and operational use by ACF technical teams, as well as through information products shared with communities, government institutions and humanitarian organizations.

In this context, the Alliances Sahel project provides an opportunity to consolidate an expanded PEWS, building on the Pastoral Early Warning System and its associated visuals in GEOSahel.info, while strengthening its capacity to incorporate new variables, automate data extraction and update processes, broaden information visualization, develop predictive models and automate periodic reports. This evolution should enable PEWS to become a more robust platform for monitoring different food and pastoral risk factors, identifying anomalies early, generating evidence for anticipatory action and communicating timely, useful information tailored to different audiences. This technology consultancy will be developed in close coordination with ACF Senegal and ACF-ROWCA teams. This specialized analytical consultancy will be developed in close coordination with ACF Senegal, ACF-ROWCA and SensingTools. The selected consulting firm or technical team shall support the development, testing and validation of advanced analytical and predictive approaches, historical time-series analysis and technical thresholds for possible integration into PEWS.

3. GENERAL OBJECTIVE OF THE CONSULTANCY

Strengthen the analytical capacities of PEWS through the exploration, development and documentation of advanced analysis methods, predictive or nowcasting models, historical time-series analysis and the proposal of technical thresholds, taking into account relevant temporal and seasonal dynamics, in order to support early warning, anticipatory action and humanitarian decision-making.

4. SPECIFIC OBJECTIVES

SO1. Identify and prioritize, with ACF and SensingTools, the target variables useful for predictive analysis or nowcasting, including food security indicators, variables from sentinel sites, pastoral indicators, biomass or vegetation anomalies and, if data allow indicators such as FCS, rCSI, IPC/CH or wasting.

SO2. Assess the availability, quality, historical depth, frequency, spatial granularity and limitations of the data that can be used for advanced analyses.

SO3. Develop and test prototypes of analytical, predictive or nowcasting models capable of estimating the current or near-current status and, where data availability permits, forecasting the evolution of selected variables over operationally relevant lead times for early warning and anticipatory action.

SO4. Analyse historical time series of key indicators, taking into account seasonal and agroclimatic patterns, in order to identify anomalies, trends, critical pastoral periods, recurrence and cumulative effects of deficits, and technical thresholds that may contribute to early warning and anticipatory action.

SO5. Define a methodology for model validation and evaluation, including performance indicators, usage limitations, uncertainties and risks of misinterpretation.

SO6. Document methods, scripts, parameters, results, limitations and recommendations to enable ownership, reproduction and possible future integration into PEWS.

5. SCOPE OF THE CONSULTANCY

The consultancy will cover the advanced analytical components of PEWS. It will include the analysis of historical data, the exploration of predictive or nowcasting models, support for the definition of technical thresholds, analysis of the relevance of selected target variables and the production of methodological recommendations for gradual integration into PEWS information products. It will include, in particular:

- Review of available data sources for predictive analysis or nowcasting, primarily based on datasets and sources provided by ACF and SensingTools and complemented, where relevant, by targeted additional sources identified by the consulting firm;
- Analysis of data quality, gaps, biases, breaks in series, update frequency and spatial and temporal comparability;
- Analysis of temporal and seasonal characteristics of the available data, including differences in update frequency, seasonal cycles, lagged relationships between predictors and outcomes, cumulative effects, critical pastoral periods and the suitability of different forecast horizons for anticipatory action;
- Preparation of reproducible analytical datasets, accompanied by a data dictionary and documentation of the processing performed;
- Experimental development of statistical, machine-learning, forecasting or nowcasting models, depending on data availability and objectives validated with ACF and SensingTools, including the assessment of alternative temporal structures and forecast horizons where relevant;
- Consideration of SensingTools methodological contributions on data, models, social sensors, natural language processing and perception analysis;
- Analysis of normalized historical time series, for example through anomalies, z-scores, percentiles or other explainable methods, to support discussions on technical thresholds;
- Formulation of recommendations on thresholds, warning signals or interpretation rules that can be tested, validated or calibrated with technical teams, institutional partners or communities.

The consultancy shall not impose automatic operational deployment of the models developed. Any operational integration into PEWS shall be subject to technical and institutional validation by ACF.

6. MAIN ACTIVITIES PLANNED

Activity	Description	Indicative Logical Framework activity
A1. Analytical scoping and prioritization of target variables	Organization of technical workshops with ACF Senegal, ACF ROWCA, SensingTools and relevant partners to clarify analytical needs, priority target variables, geographic and temporal analysis scales, expected uses and success criteria of the consultancy. The scoping shall explicitly define the relevant temporal dimensions of the forecasting problem, including data frequencies, seasonal and pastoral cycles, critical periods, lag structures and the prediction or nowcasting horizons to be tested, taking into account the operational lead time required for anticipatory action.	R1A3

Activity	Description	Indicative Logical Framework activity
A2. Analytical audit of available data	Inventory and assessment of data available for advanced analyses: historical depth, frequency, spatial coverage, quality, biases, gaps, collection methods, formats and potential for cross-analysis. Where relevant, this activity shall include sources or approaches linked to social sensors and perception data monitored by SensingTools. The assessment shall pay particular attention to temporal coverage and consistency, seasonal gaps, changes in collection frequency, temporal lags between predictors and outcomes, and the compatibility of sources collected at different frequencies, including daily, dekadal, monthly or seasonal data.	R1A1, R1A3
A3. Preparation of analytical datasets	Preparation of clean, documented and reproducible datasets for historical analyses, model testing and validation. This activity will include structuring explanatory and target variables, processing missing values, spatial and temporal alignment of sources and production of a data dictionary. Dataset preparation shall include appropriate treatment of temporal structures, including lagged variables, rolling or cumulative windows, seasonal normalization and, where methodologically justified, transformations aimed at addressing trends, stationarity or cyclical effects.	R1A3
A4. Development of predictive or nowcasting model prototypes	Construction, testing and comparison of statistical or machine-learning models adapted to available data. Depending on the case, approaches may include regression models, time-series models, classification models, ensemble models, explainable models, nowcasting approaches or models integrating variables from social sensors. The modelling approach shall explicitly account for temporal and seasonal dynamics relevant to Sahelian food security and pastoral systems. Where appropriate, models should test seasonal features, lagged predictors, cumulative anomalies and other representations of periodicity, as well as different forecast horizons. The consultant shall assess whether model performance varies across seasons, geographic areas and critical pastoral periods. Where data permit, different operationally relevant lead times shall be compared in order to identify the earliest horizon at which predictions retain sufficient reliability to support anticipatory action.	R1A3
A5. Historical time-series analysis and support for threshold definition	Analysis of historical time series of key indicators, including NDVI, biomass production, rainfall, burned areas, surface water and PEWS pastoral indicators, in order to identify anomalies, seasonal patterns, critical pastoral periods, recurrent deficits and possible technical thresholds. Historical series shall be analysed taking into account the seasonal and agroclimatic characteristics of the different areas, so that anomalies and thresholds are interpreted relative to the expected conditions for each period of the year rather than only against absolute values. Where relevant, lagged and cumulative effects shall be explored in order to assess how early changes in monitored variables can provide useful warning	R2A1

Activity	Description	Indicative Logical Framework activity
	signals before significant deterioration in pastoral livelihoods or food security occurs. The analysis shall consider not only the statistical robustness of proposed thresholds, but also their practical lead time and operational usefulness for anticipatory action.	
A6. Validation, evaluation and uncertainty analysis	Evaluation of the performance of proposed models and thresholds using validation datasets, temporal comparisons, error analyses, performance indicators and qualitative analysis of limitations. Results shall explicitly present uncertainties and interpretation risks. Model validation shall respect the chronological structure of the data and avoid information leakage between training and validation periods. Where data availability permits, time-series cross-validation, rolling-origin validation or equivalent temporally robust approaches shall be used to assess performance across different historical periods, seasons and critical pastoral cycles. Model performance should also be compared against appropriate simple reference approaches, such as persistence, historical averages or seasonal/climatological baselines, in order to demonstrate the actual added value of the predictive models. Validation shall also assess performance across the different forecast horizons considered.	R1A3, R2A1
A7. Recommendations for integration into PEWS	Formulation of technical and methodological recommendations for possible integration of results into PEWS information products, visualizers or decision-making processes, in coherence with the technical architecture and technological developments implemented under the complementary PEWS technical consultancy and with SensingTools contributions. Recommendations shall specify, where relevant, the variables, models, forecast horizons, thresholds, update frequencies, uncertainty information and interpretation rules that could be operationalized within PEWS. Particular attention shall be given to how validated analytical outputs can contribute to early warning and the subsequent activation of anticipatory-action mechanisms.	R1A2, R1A3; contributing to R3A2
A8. Documentation, transfer and training	Production of comprehensive documentation and facilitation of technical sessions with ACF and SensingTools teams to support understanding, reproduction, maintenance and cautious use of the proposed analyses, models and thresholds. Documentation shall include the methodological choices related to temporal aggregation, seasonal adjustment, lag structures, forecast horizons, validation procedures and limitations of the models. Training shall enable ACF and SensingTools teams to interpret not only model outputs but also uncertainty, seasonal effects and the conditions under which forecasts or thresholds should or should not be used for operational decision-making.	R1A4

7. EXPECTED DELIVERABLES

Expected deliverable	Minimum content / characteristics
Deliverable 1. Analytical scoping note and work plan	Document specifying analytical objectives, prioritized target variables, mobilizable sources, working assumptions, validation criteria, detailed schedule and coordination arrangements with ACF and SensingTools.
Deliverable 2. Data audit and modelling feasibility report	Report assessing the quality, availability, coverage, historical depth and limitations of available data, including complementary sources or variables linked to social sensors or perception analysis where relevant.
Deliverable 3. Prepared and documented analytical datasets	Structured, cleaned and documented datasets, accompanied by a data dictionary, a description of the processing carried out, and reproducible scripts used for their preparation.
Deliverable 4. Analytical, predictive or nowcasting model prototypes	Set of developed or adapted prototypes, accompanied by code, parameters, test results, performance metrics, explanation of variables used and description of usage limitations. Where relevant, the deliverable shall document the treatment of seasonality, lagged variables, cumulative effects and the different forecast horizons tested, as well as possible variations in model performance across geographic areas, seasons or critical pastoral periods.
Deliverable 5. Historical time-series analysis and proposal of technical thresholds	Report presenting historical analyses, anomalies, critical periods, proposed technical thresholds, methodological justifications and recommendations for validation or calibration by ACF, institutional partners or communities. The proposed thresholds should be designed to support the earliest possible activation of anticipatory actions when monitored variables indicate a significant deterioration in pastoral conditions, with the aim of helping at-risk pastoral households protect their productive assets and mitigate the risk of worsening food insecurity. The analysis shall consider not only the statistical robustness of the proposed thresholds, but also their practical lead time and operational usefulness for anticipatory action.
Deliverable 6. Validation, limitations and usage recommendations report	Document presenting validation results, uncertainties, possible biases, interpretation risks, minimum conditions for use and recommendations on possible or non-recommended uses. The report shall describe the temporal validation strategy applied, compare model performance against appropriate reference or baseline approaches, and assess the robustness of results across different periods, seasons, geographic areas and forecast horizons where relevant.
Deliverable 7. Technical documentation and reproduction guide	Consolidated documentation covering how scripts work, repository organization, software dependencies, reproduction procedures, maintenance recommendations and conditions for future integration into PEWS.
Deliverable 8. Technical transfer sessions and final report	Transfer sessions with ACF teams and, where relevant, SensingTools, accompanied by training materials, and a final report summarizing work completed, results, limitations, scaling opportunities and recommendations for next steps.

8. METHODOLOGICAL CONSIDERATIONS

The consultancy shall follow an exploratory, progressive, transparent and reproducible approach. Proposed models or thresholds shall be assessed cautiously and accompanied by a clear explanation of their limitations. No model output shall be considered an operational alert without validation by ACF. The methodology shall integrate:

- Initial validation of target variables and priority sources with ACF, in coordination with SensingTools where relevant;
- A clear distinction between exploratory results, prototypes and operational recommendations;
- Preference for explainable models over opaque approaches when results are intended to support humanitarian decision-making;
- Explicit consideration of temporal and seasonal dynamics relevant to Sahelian food security and pastoral systems, including critical pastoral periods, seasonal anomalies, lagged relationships and cumulative effects;
- Use of temporally robust validation approaches that preserve the chronological structure of the data and avoid information leakage between training and validation periods;
- Comparison of predictive models with appropriate simple reference approaches, such as persistence, historical averages or seasonal/climatological baselines, to demonstrate their actual added predictive value;
- Systematic analysis of uncertainties, biases, data limitations and interpretation risks;
- Compliance with data protection, data ethics, do no harm and responsible use of artificial intelligence principles;
- Reproducibility of analyses, with documented scripts and a version-controlled repository where relevant;
- Capacity transfer so that ACF and SensingTools teams can understand, reuse or adapt the proposed methods.

9. INDICATIVE SCHEDULE

The final schedule will be established at the start of the consultancy. As an indication, the following sequence may be envisaged over a period of **6 to 9 months**. The sequencing may be adjusted according to data availability, methodological findings and the need for iterative validation with ACF and SensingTools.

Phase	Description
Phase 1. Scoping and needs review	Kick-off workshop with ACF and SensingTools; confirmation of analytical objectives and expected operational uses; selection and prioritization of target variables; definition of relevant geographic and temporal scales; identification of seasonal and pastoral cycles, critical periods, potential lag structures and operationally relevant forecast or nowcasting horizons; agreement on success criteria, validation principles, coordination arrangements and detailed work plan.
Phase 2. Data audit and feasibility	Based primarily on datasets and data sources provided by ACF and SensingTools, complemented where relevant by targeted searches and additional sources identified by the consulting firm, this phase will assess data quality, historical depth, spatial coverage, update frequency, temporal consistency, gaps, biases and comparability.

	Particular attention shall be paid to differences in data frequency, seasonal coverage, breaks in time series and temporal relationships between predictors and target variables. The phase shall conclude with recommendations on the feasibility of the proposed analyses and modelling approaches.
Phase 3. Data preparation	Development of clean, structured, documented and reproducible analytical datasets for historical analysis, modelling and validation. This phase shall include spatial and temporal alignment of sources, treatment of missing data, preparation of explanatory and target variables, development of lagged or cumulative variables where relevant, seasonal normalization or other appropriate temporal transformations, and production of a data dictionary and reproducible processing scripts.
Phase 4. Modelling and historical analysis	Development, testing and comparison of predictive, forecasting or nowcasting model prototypes adapted to the available data and operational objectives. The analysis shall explicitly consider seasonal and temporal dynamics relevant to Sahelian food security and pastoral systems, including critical pastoral periods, lagged relationships and cumulative anomalies. Different forecast horizons shall be tested where data permit. In parallel, historical time series of key indicators shall be analysed to identify seasonal patterns, anomalies, recurrent deficits, critical periods and possible technical thresholds for early warning and anticipatory action.
Phase 5. Validation and operational recommendations	Evaluation of model and threshold performance using temporally robust validation approaches that preserve the chronological structure of the data and avoid information leakage. Where feasible, models shall be assessed across different historical periods, seasons, geographic areas and forecast horizons and compared with appropriate reference approaches, such as persistence, historical averages or seasonal/climatological baselines. The phase shall include analysis of uncertainties, biases, interpretation risks and practical lead times, as well as recommendations on potential operational uses, non-recommended uses and conditions for possible integration into PEWS. Before any recommendation for operational integration into PEWS, the proposed models, thresholds and analytical outputs shall be subject to functional validation by the relevant ACF user teams.
Phase 6. Documentation, transfer and closure	Preparation of final methodological and technical documentation, including scripts, repositories, data preparation procedures, modelling approaches, temporal and seasonal treatment, validation methods, performance metrics, uncertainties and recommendations for reproduction and maintenance. Technical transfer and training sessions shall be conducted with ACF and SensingTools teams to support understanding, appropriate interpretation and future reuse or adaptation of the models and thresholds. The phase shall conclude with the final consultancy report and recommendations for next steps, future integration into PEWS and potential scaling.

10. DELIVERY MODALITIES

All deliverables shall be submitted in digital format, with editable versions where relevant. Scripts, notebooks, prepared datasets, data dictionaries, models, temporal validation procedures and documentation shall be delivered in reusable and reproducible formats. Technical elements shall be deposited in a version-controlled space validated by ACF, such as GitHub, GitLab or any other institutional solution. Deliverables shall include the instructions required for installation, execution, reproduction,

updating and maintenance of the analyses. Sensitive or potentially sensitive data shall be anonymized, aggregated or protected in accordance with ACF rules and applicable data protection principles. Any exchange with SensingTools or other technical partners shall comply with the same rules.

11. PROFILE OF THE CONSULTING FIRM OR CONSULTING TEAM

The consultancy shall be carried out by a consulting firm, consulting team, applied research centre or technical entity with proven experience in the following areas:

- Data science, applied statistics, machine learning or predictive modelling;
- Time-series analysis, forecasting, nowcasting or near-real-time estimation methods, including the treatment of seasonality, temporal lags and time-aware model validation;
- Geospatial analysis, remote sensing, agroclimatic and environmental indicators;
- Food security, pastoral livelihoods and agro-pastoral seasonal dynamics, early warning, anticipatory action or humanitarian risk analysis;
- Preparation of analytical datasets, technical documentation and reproducibility of processing;
- Responsible use of artificial intelligence, model explainability and data protection in humanitarian contexts;
- Capacity to coordinate with technical partners such as SensingTools, particularly on data, models, social sensors or perception analyses;
- Technical training, capacity transfer and production of operational documentation.

The team should ideally combine profiles such as data scientist, GIS/remote-sensing specialist, statistician or time-series specialist, food security or early warning expert, and technical documentation lead.

12. PROPOSAL EVALUATION CRITERIA

Evaluation block	Criterion assessed	Assessment method	Maximum score
1. Technical quality of the proposal	1.1 Understanding of analytical needs and the PEWS context	Understanding of the role of PEWS, operational uses of data, complementarity with SensingTools and limitations related to predictive analysis in humanitarian contexts.	10
	1.2 Proposed methodology	Clarity of the methodology for data audit, target variable selection, treatment of temporal and seasonal dynamics, modelling, selection of forecast horizons, validation and uncertainty analysis.	13
	1.3 Relevance of modelling and historical analysis approaches	Relevance of the proposed methods for nowcasting and forecasting, predictive modelling, historical time-series analysis, seasonality, lagged and cumulative effects, anomalies, validation against appropriate baselines and definition of technically and operationally useful thresholds.	13

Evaluation block	Criterion assessed	Assessment method	Maximum score
	1.4 Reproducibility, documentation and transfer	Quality of arrangements for scripts, version-controlled repositories, documentation, training, coordination with ACF and SensingTools, and ownership by ACF.	9
Subtotal 1	Technical quality		45
2. Experience and team solvency	2.1 Experience in data science, predictive models or nowcasting	Demonstrated experience in comparable projects, ideally with heterogeneous, time-series and geospatial data.	8
	2.2 Experience in remote sensing, GIS and environmental indicators	Experience related to NDVI, biomass production, rainfall, surface water, burned areas or other agro-environmental indicators.	6
	2.3 Experience in food security, pastoralism or early warning	Experience in food security, livelihoods, anticipatory action or early warning systems.	6
	2.4 Education and complementarity of the team	Relevance of the proposed profiles and complementarity between technical, thematic and methodological skills.	5
	2.5 Publications, tools or methodological products	Technical products, reports, publications, repositories or tools related to data, AI, GIS or early warning.	5
Subtotal 2	Experience and solvency		30
3. Financial offer	3.1 Coherence and detail of the financial offer	Offer sufficiently detailed by profiles, days, products, licenses, tools, travel, taxes and other costs, with coherence between the budget and the proposed technical scope. The proposed budget must include taxes.	5
	3.2 Proportional financial weighting	The lowest financial offer will receive the maximum score. The others will be scored proportionally according to the formula: $FS = (LFO / CEO) \times 20$, where FS is the financial score, LFO is the lowest financial offer and CEO is the candidate entity's evaluated offer. For provisions concerning abnormally low financial offers, see the section below.	20
Subtotal 3	Financial offer		25
TOTAL	TOTAL SCORE		100

Abnormally low financial offers

ACF reserves the right to identify and review any financial offer that appears abnormally low in relation to the scope, complexity and expected level of effort of the consultancy. As an indicative benchmark, an offer may be considered potentially abnormally low where its total price is 30% or more below the average of the other admissible financial offers and/or substantially below ACF's internal cost estimate or budgetary assessment for the assignment.

Where an offer is identified as potentially abnormally low, ACF may request the tenderer to provide a written explanation and detailed justification of the proposed price, including, where relevant, the level of effort, number of working days, staff rates, allocation of profiles, methodological assumptions, use of existing resources or tools, licenses, subcontracting arrangements and any other factor explaining the proposed cost.

ACF will assess whether the explanations provided demonstrate that the proposed price is realistic, sustainable and compatible with the technical requirements and expected quality of the consultancy. Where the justification is considered insufficient, or where ACF reasonably concludes that the proposed price may compromise the feasibility, quality or satisfactory performance of the assignment, the offer may be rejected as abnormally low and excluded from further evaluation or award.

13. ROLE AND RESPONSIBILITIES OF ACF

ACF will provide strategic guidance, technical coordination, validation of target variables, access to available data, review of products and final validation of results. ACF will remain responsible for any decision regarding the operational use of models, thresholds or recommendations produced under this consultancy. Other key responsibilities of ACF are set out below

- Appoint a focal person for follow-up of the consultancy;
- Facilitate access to data, documents, platforms or necessary contacts;
- Validate target variables, priority sources and working assumptions;
- Facilitate dialogue with SensingTools and other relevant technical partners;
- Organize exchanges with technical teams, user teams and SensingTools;
- Review and validate intermediate and final deliverables;
- Decide on any conditions for integrating results into PEWS.
- Make payments in accordance with the relevant contract.

14. ROLE OF SENSINGTOOLS AND OTHER TECHNICAL PARTNERS

SensingTools, as a technology partner of the Alliances Sahel project, will participate in the technical coordination of the consultancy, particularly for aspects related to data science, social sensors, natural language processing, social perception analysis, model interpretation and their articulation with the technical work planned under the main ToR. Its role may include:

- Reviewing the methodological orientations proposed under the consultancy;
- Participating in technical scoping, follow-up and validation meetings where relevant;
- Sharing methodological criteria on data, models, social sensors, natural language processing and perception analysis;
- Reviewing or commenting on technical products related to models, thresholds, historical analyses or recommendations for integration into PEWS;
- Facilitating complementarity between this complementary consultancy and other technological or analytical activities planned under the project;

- Contributing to technical exchanges aimed at strengthening coherence, ownership and sustainability of the proposed approaches.

Other technical, institutional or community partners may also participate occasionally in meetings, validations or exchange spaces when ACF considers it relevant.

15. INTELLECTUAL PROPERTY, CONFIDENTIALITY AND DATA PROTECTION

All reports, prepared datasets, scripts, code, models, visualizations, methodologies, proposed thresholds, documentation and products generated during the consultancy shall be the property of ACF, unless otherwise stipulated contractually. The consulting firm may not use, disseminate, transfer, publish or reuse generated data or results without prior written authorization from ACF. Models and analyses shall comply with principles of confidentiality, data protection, do no harm, methodological transparency and responsible use of artificial intelligence.

Where external artificial intelligence, cloud processing or language model services are proposed, their use shall be explicitly declared. The proposal shall detail any recurring costs, licensing conditions, usage limits, data protection arrangements, data hosting location and maintenance requirements. Any exchange of data or results with SensingTools or any other technical partner shall be previously validated by ACF and comply with rules on confidentiality, data protection and responsible use of information.

The consulting firm shall guarantee the protection of processed data, particularly when such data may relate to communities, households, sensitive locations, humanitarian information, security or any other type of data that could generate risks for vulnerable populations, humanitarian personnel, partners or institutions.

16. SAFEGUARDING, PROTECTION AND CODE OF CONDUCT

The consulting firm and all personnel linked to the consultancy shall comply with ACF institutional policies, including the Code of Conduct, the policy on protection from sexual exploitation and abuse, the gender policy, the child protection policy and any other applicable safeguarding policy. The consulting firm shall act at all times in accordance with the principles of respect, non-discrimination, protection, confidentiality, do no harm and accountability towards communities and actors directly or indirectly involved in the project.

17. FRAUD, CORRUPTION AND TRANSPARENCY

All individuals, companies or consulting teams participating in the selection process and implementation of the consultancy shall observe the highest ethical standards and report any suspicion of fraud, corruption, conflict of interest, misuse of information or practice contrary to ACF principles. ACF is committed to transparency, accountability, data protection, institutional integrity and responsible use of resources allocated to cooperation and humanitarian action.

18. DOCUMENTATION TO BE SUBMITTED BY INTERESTED ENTITIES

Interested entities shall submit:

- A duly completed application form provided by ACF, including relevant information on the consulting firm or entity, as well as on the experts and key members of the proposed consulting team;
- A technical proposal describing their understanding of the mandate, proposed methodology, models or families of methods envisaged, validation strategy and anticipated limitations;
- A financial proposal detailed by activity, profile, number of days, deliverables, possible licenses and recurring costs;
- CVs, including copies of diplomas, of the members of the proposed technical team involved in the direct implementation and supervision of the consultancy services provided;

- Examples of similar experience, reports, models, repositories, publications or products;
- A note on data management, reproducibility, model explainability and data protection;
- Legal and tax documentation required for contracting.

COMPANY AND PROPOSED TEAM INFORMATION FORM

Consultancy: PEWS – Advanced Analysis, Predictive Modelling and Alert Thresholds

Instructions:

Please complete this form and submit it together with the technical and financial proposals. Information should be concise, directly relevant to the consultancy and verifiable where possible.

1. General information on the applicant

Item	Information
Legal name of the entity	
Country of registration	
Year of establishment	
Website	
Main contact person	
Email / telephone	
Approximate number of permanent staff	
Main technical areas of specialization	

Brief description of the organization and its main areas of expertise relevant to this consultancy.

Maximum 150 words.

2. Relevant experience of the applicant (This section supports the assessment of criteria 2.1, 2.2 and 2.3 of the ToR).

Please list up to **five assignments** that best demonstrate the applicant's experience relevant to this consultancy.

Project / assignment	Client / country	Year	Main relevant experience	Main outputs / reference / Links

For the projects listed above, indicate the main areas in which the applicant has demonstrated experience:

Area of experience	Yes / No	Main project(s) demonstrating this experience
Data science, predictive modelling, forecasting or nowcasting		
Time-series analysis and temporal / seasonal modelling		
Remote sensing, GIS and agro-environmental indicators		
Food security, pastoralism, early warning or anticipatory action		
Sahel / West Africa		

3. Proposed consulting team

(This section supports the assessment of criterion 2.4 and complements criteria 2.1–2.3)

Please provide information only for the experts who will participate directly in the implementation or technical supervision of the consultancy.

Name	Proposed role	Main qualification / specialization	Years of relevant experience	Main relevant expertise	Estimated input / working days

Briefly explain how the proposed team combines the main competencies required for the consultancy, including data science / modelling, time-series analysis, remote sensing / GIS and food security / early warning expertise. Maximum 200 words.

4. Relevant publications, tools and methodological products

(This section supports the assessment of criterion 2.5 of the ToR).

Please list up to **five products** considered most relevant to the consultancy. These may include publications, technical reports, predictive models, software or code repositories, dashboards, methodological guides or early-warning tools.

Product / publication	Type	Year	Author / responsible expert	Relevance to this consultancy	Link / reference, if available

5. References and declaration

Please provide up to **three references** for comparable assignments.

Client / organization	Contact person	Email	Relevant assignment

The applicant confirms that the information provided in this form is accurate and may be verified by ACF.

Name of authorized representative:

Position:

Organization:

Date:

Signature:

Dr. SIROMA NSE'E NOMSILI Françoise

Dakar, le 07/09/2026

