Terms of Reference (TOR)

Consultancy for Integrated Local Ecosystem Mapping, Climate Projection, and Disaster Risk Analyses Gode, Adadle, and Kelafo Woredas, Shabelle Zone, Somali Region

Date: 18/09/2025
Technical and financial submission date: 03/10/2025

Project Title: *Strengthening local climate-sensitive and universal WASH capacities using and disseminating the Green Humanitarian Aid approach*

Implementing Organization: Organization for Welfare and Development in Action (OWDA)

Partner Organization: Arche-Nova, Germany

Project Location: Gode, Adadle, and Kelafo Woredas, Shabelle Zone, Somali Region

1. Introduction

The Organization for Welfare and Development in Action (OWDA), established in 1999, is a national humanitarian and development organization based in Ethiopia. OWDA began by providing emergency relief to crisis-affected communities in the Somali Region. Over time, recognizing the recurring nature of droughts, floods, and other shocks, the organization shifted its approach from short-term relief to long-term resilience building and sustainable development programming. OWDA is one of the leading national actors, with extensive experience in humanitarian response and development works including WASH, livelihoods and food security, education and protection, health and nutrition and natural resource management.

In partnership with Arche-Nova (Germany), OWDA is currently implementing a three-year project that promotes Green Humanitarian Aid to strengthen climate-sensitive and universal

WASH capacities. Within this framework, OWDA seeks to commission a consultancy to conduct an **integrated local ecosystem mapping, climate projection, and disaster risk analysis**.

This consultancy will provide the geospatial, ecological, and scientific evidence base needed to guide climate-resilient programming, support ecosystem-based disaster risk reduction (Eco-DRR), and inform community-driven adaptation strategies in the Shabelle Zone (Gode, Adadle, and Kelafo Woredas).

2. Background and Rationale

The Somali Region represents an ecologically fragile dryland system predominantly sustained by pastoral and agro-pastoral livelihoods. The area is increasingly exposed to the adverse impacts of climate change, including recurrent droughts, erratic rainfall, soil degradation, and the depletion of critical natural resources such as water and rangeland vegetation. These climate-induced stressors are exacerbating food insecurity, intensifying water scarcity, driving population displacement, and accelerating environmental degradation.

In response, it is imperative to generate a robust understanding of both the current ecological status and the projected impacts of climate variability and long-term climate change scenarios. Advanced climate projection analyses encompassing forecasts of shifts in temperature, rainfall regimes, and the frequency and intensity of extreme weather events are vital for informing proactive, evidence-based, and community-centered disaster risk reduction (DRR) and climate adaptation interventions.

This consultancy assignment is designed to address existing knowledge gaps within the project's target Woredas by producing an integrated ecosystem mapping, undertaking forward-looking climate projection analyses, and conducting comprehensive climate and disaster risk assessments. The study will leverage and harmonize existing data, analytical frameworks, and participatory insights to ensure scientific rigor, contextual relevance, and operational applicability for resilience-building in the Somali Region.

3. Overall Objective

To conduct an integrated assessment of ecosystems, climate projections, and disaster risks that will inform inclusive, climate-resilient development and disaster risk reduction (DRR) planning in the Gode, Adadle, and Kelafo Woredas of Shabele zone of Somali region.

Specific Objectives

a. To map and document land use, vegetation cover, water sources, soils, biodiversity, and community practices in managing and using these ecosystems.
b. To develop and analyze climate projection scenarios for Gode, Adadle, and Kelafo Woredas, focusing on future trends in temperature, rainfall patterns, and extreme weather events.
c. To assess both current and future climate and disaster risks including droughts, flash floods, and land degradation while identifying the vulnerabilities of communities, ecosystems, and livelihoods.
d. To compile and integrate existing maps, datasets, and climate studies into a comprehensive, evidence-based profile of risks and natural resources.
e. To provide clear, practical, and spatially informed recommendations that guide climate adaptation and ecosystem-based disaster risk reduction.
f. To promote green humanitarian approaches and strengthen community resilience to climate change.

4. Scope of Work

a. Assessment Area

The consultancy will focus on Gode, Adadle, and Kelafo Woredas in the Shabelle Zone of the Somali Region, covering both ecological and socio-economic aspects of the landscape to inform climate adaptation and disaster risk reduction interventions.

b. Key Tasks

1. **Ecosystem Mapping**

- Conduct comprehensive mapping of land use and land cover, including agricultural fields, grazing lands, settlements, bare or degraded areas, and seasonal changes in land utilization.

- Characterize vegetation types, their density, spatial distribution, and seasonal dynamics, highlighting areas critical for livestock grazing and biodiversity conservation.
- Identify and map water resources, including rivers, ponds, seasonal streams, and groundwater points, with attention to availability, quality, and seasonal variability.
- Assess soil types and conditions, identifying erosion-prone zones, areas of degradation, and suitability for agriculture or grazing.
- Document biodiversity, including key plant and animal species, endangered or critical habitats, and ecosystem services important for local livelihoods.
- Analyze community interactions with natural resources, including grazing management, fuelwood and charcoal collection, water usage patterns, and other livelihood practices affecting ecosystems.

2. **Climate Projection Analysis**
   - Collect and analyze historical climate data from national and international sources to understand past trends in temperature, rainfall, and extreme events.
   - Generate downscaled climate projections for the target Woredas, capturing changes in mean and extreme temperatures, rainfall onset, intensity, and seasonal duration.
   - Evaluate the frequency and severity of climate hazards, including droughts, floods, and heatwaves, under multiple climate scenarios (e.g., RCP 4.5, RCP 8.5).
   - Compare outputs from multiple climate models to provide a range of potential future scenarios, highlighting uncertainties and expected trends.
   - Present technical results in user-friendly formats, including maps, visual charts, and narrative scenarios, suitable for local decision-making and planning.
3. **Climate and Disaster Risk Analysis**
   - Identify and map current climate hazards and exposure levels, including areas vulnerable to flooding, drought, and land degradation.

- Map vulnerable population groups, such as pastoralists, women-headed households, youth, and persons with disabilities, to assess differential impacts of climate hazards.
- Evaluate community coping mechanisms and adaptive capacities, documenting local knowledge, practices, and strategies used to manage climate risks.
- Conduct Participatory Risk Mapping workshops with local communities to validate data, capture local perspectives, and ensure relevance of findings.
- Align risk assessment outputs with national and regional DRR and climate adaptation frameworks to support policy coherence and practical application.

4. **Integration of Existing Assessments**
    - Review and synthesize relevant government data, including regional planning documents, climate reports, and resource inventories.
    - Integrate findings from NGO and UN climate risk assessments, GIS datasets, and project reports to ensure a comprehensive evidence base.
    - Incorporate community-based mapping and resilience plans, combining local knowledge with scientific analysis for actionable insights.
    - Leverage regional climate datasets from institutions such as IGAD, ICPAC, and FEWS NET to provide broader contextual understanding and inform projection models.

5. Methodology

The consultant(s) will determine the specific methodological framework for the assessment. However, a mixed-methods and participatory approach is recommended to ensure robust, evidence-based, and contextually relevant outcomes. The methodology may include the following components:

- **Desk Review**: Systematic analysis of existing climate studies, environmental and ecological assessments, land-use reports, and relevant project documents to synthesize baseline information and identify data gaps.
- **Remote Sensing and GIS Analysis**: Utilization of high-resolution satellite imagery, spatial datasets, and geospatial tools to map land use/cover, vegetation, water resources, and

disaster-prone areas. This includes overlay analysis for ecosystem vulnerability and hazard exposure.

- **Climate Modelling and Projection**: Application of regionally downscaled climate models (e.g., CORDEX-Africa) to simulate future climate scenarios, including temperature and precipitation trends, as well as the frequency and intensity of extreme weather events. Scenario comparisons (e.g., RCP 4.5 and RCP 8.5) should be conducted to assess uncertainty and provide a range of plausible climate futures.
- **Field-Based Ecological Assessments**: Ground-truthing of remote sensing data through transect surveys, vegetation sampling, soil assessment, and water resource evaluation to validate mapped outputs and collect primary ecological data.
- **Participatory Community Engagement**: Implementation of participatory rural appraisals (PRAs), focus group discussions (FGDs), key informant interviews, and stakeholder consultations with local communities including elders, women, youth, and technical officials to capture local knowledge, resource management practices, and adaptive strategies.
- **Data Integration and Analysis**: Triangulation of desk review, spatial analysis, climate modelling outputs, field assessments, and community-derived data to produce a comprehensive, evidence-based profile of ecosystems, climate risks, and community vulnerabilities.

6. Institutional and Policy Alignment

All activities under this assignment must be conducted in alignment with relevant national, regional, and international policy frameworks, as well as local governance and customary practices, to ensure coherence, legitimacy, and sustainability. Key reference frameworks include:

- **National Framework for Climate Services Strategic Plan**: Ensuring that climate information, early warning systems, and adaptation strategies are consistent with national climate service priorities.

- **Somali Region Ten-Year Development Plan (2021–2030)**: Aligning ecosystem management, climate adaptation, and disaster risk reduction interventions with regional development objectives.
- **Environmental Policy of Ethiopia and Somali Region**: Incorporating principles of sustainable natural resource management, biodiversity conservation, and ecosystem protection.
- **Disaster Risk Management Policies of Ethiopia and Somali Region**: Ensuring interventions support integrated risk reduction, resilience-building, and community preparedness strategies.
- **Regional Climate and Risk Frameworks (e.g., IGAD-ICPAC)**: Integrating regional climate projections, early warning information, and transboundary risk management approaches.
- **Customary Laws and Traditional Resource Management Practices**: Recognizing and incorporating local governance systems, community rules, and indigenous knowledge for sustainable resource use.
- **Green Humanitarian Aid Principles and Project Objectives**: Applying environmentally sustainable, climate-sensitive, and resilience-focused approaches in line with project goals.

7. Deliverables and Timeline

Description	Deliverable	Timeline (Days)
Inception Report	Detailed work plan including proposed methodology, data collection tools, and sampling strategy.	
Desk Review Summary	Comprehensive synthesis of relevant literature, policy frameworks, and existing climate and ecosystem assessments.	

Ecosystem and Land Use Mapping	Draft GIS-based maps and spatial datasets highlighting land use/cover, vegetation, water resources, soils, and biodiversity.	
Field and Qualitative Assessment	Analytical report on local ecosystem dynamics, ecological conditions, community resource use, and climate perceptions.	
Stakeholder Validation Workshop	Presentation of preliminary findings and participatory validation with key stakeholders, including local communities and technical authorities.	
Draft Final Report	Consolidated report integrating all findings, maps, climate projections, identified gaps, and actionable recommendations.	
Final Report and Annexes	Revised and finalized report, GIS datasets, raw data files, and supporting presentation materials for project dissemination.	
Total Duration		45

8. Required Expertise

The selected consultant(s) or firm should demonstrate a combination of advanced technical skills, scientific expertise, and relevant regional experience, including:

- **Ecosystem and Dryland Ecology Expertise**: Proven experience in conducting ecological and environmental assessments, particularly in dryland and pastoral systems, including vegetation surveys, land use/cover analysis, and biodiversity evaluations.
- **Climate Science and Modelling Competence**: Demonstrated proficiency in climate projection analyses, including the use of regionally downscaled climate models (e.g., CORDEX-Africa), assessment of temperature and precipitation trends, and evaluation of climate variability and extreme events in arid and semi-arid environments.

- **Geospatial and Risk Mapping Skills**: Advanced technical capacity in Geographic Information Systems (GIS), remote sensing, spatial analysis, and ecosystem-based risk mapping for climate and disaster assessments.
- **Regional Knowledge**: In-depth understanding of the Somali Region's socio-ecological context, climate variability, pastoral livelihoods, and the broader Ethiopian climate adaptation and development frameworks.
- **Participatory and Stakeholder Engagement Experience**: Proven ability to design and implement inclusive participatory approaches, such as focus group discussions, key informant interviews, and participatory rural appraisals, translating complex scientific outputs into accessible formats for local communities and decision-makers.
- **Educational and Professional Qualifications**: Advanced degree (Master's or PhD preferred) in Environmental Science, Ecology, Climate Science, Geography, or related fields, with at least 7–10 years of relevant professional experience in ecosystem assessment, climate risk analysis, and participatory research.
- Language Proficiency: Fluency in Somali and English, both written and spoken, to facilitate data collection, stakeholder engagement, and report production.

9. Roles and Responsibilities of Parties

Role of the Contracting Organization (OWDA)

OWDA will provide strategic and operational support to ensure smooth implementation of the assignment. Key responsibilities include:

- Facilitating access to project staff, beneficiaries, and key stakeholders to strengthen contextual understanding.
- Offering guidance on the application of recommended frameworks, tools, and methodologies.
- Coordinating and facilitating meetings with local government authorities, community representatives, and other relevant stakeholders in the target Woredas.

Role and Responsibilities of the Consultant(s)

The consultant/consulting firm will assume primary responsibility for the design, execution, and delivery of the assessment. Key responsibilities include:

- Designing a comprehensive research framework in consultation with OWDA's MEAL unit and project team.
- Developing a detailed work plan, including timelines, methodological approach, and resource allocation.
- Conducting an in-depth desk review of existing literature, policy documents, and relevant assessments.
- Preparing a research design, data collection methodology, and data analysis plan tailored to the project context.
- Producing an Inception Report, incorporating methodology, tools, and work plan, and submitting it to OWDA for review and approval.
- Integrating OWDA's feedback into a refined methodology and implementation plan.
- Recruiting, training, and supervising field enumerators to ensure high-quality data collection.
- Coordinating and managing field data collection, including logistics, supervision, and adherence to agreed protocols.
- Overseeing data quality processes, including verification, cleaning, and consistency checks.
- Leading data analysis and producing a Draft Assessment Report summarizing key findings, maps, and recommendations.
- Presenting draft results to OWDA and Arche-Nova in validation meetings/workshops for feedback.
- Participating in periodic check-in calls with OWDA to provide progress updates and address emerging issues.
- Finalizing and submitting a comprehensive final report, including annexes (GIS files, raw datasets, and presentation materials), to OWDA.

10. Evaluation Criteria and Process

Proposals will be evaluated on the basis of **technical quality**, **financial soundness**, and **team capacity**, with the following weighting:

Criteria	Description	Weighting (%)
Technical Proposal	Demonstrated understanding of the ToR, objectives, and regional context; scientific rigor and relevance of the proposed methodology; feasibility of the work plan, deliverables, and timeline; clarity and overall structure.	50%
Team Profile and Qualifications	Academic credentials, technical expertise, and professional experience of the proposed team, including proven track record in ecosystem assessments, climate modelling, GIS/remote sensing, and participatory risk analysis.	20%
Financial Proposal	Realistic and transparent budget, cost-effectiveness, and value for money while ensuring adequate resourcing for quality outputs.	30%

Technical Threshold: A minimum score of **60%(out of 100%) on technical criteria** is required for a proposal to advance to financial evaluation.

Evaluation Process

The selection of the consultant/firm will follow a structured four-stage process:

Stage 1: Administrative Compliance

- Verification of completeness of submitted documents (technical and financial proposals, CVs, evidence of experience).
- Only compliant submissions proceed to technical evaluation.

Stage 2: Technical Evaluation

- Assessment of proposals against technical quality (50%) and team qualifications (20%).

- Only bidders achieving **≥60% (out of 100%) technical score** will qualify for financial evaluation.

Stage 3: Financial Evaluation (30%)

- Financial proposals of technically qualified applicants will be reviewed.
- The lowest-priced, technically compliant proposal will receive the maximum score, with others scored proportionally using the formula: The points (P) assigned to a financial proposal are calculated by multiplying the maximum available financial points (Y = 30) by the ratio of the lowest-priced proposal (X) to the price of the proposal being evaluated (Z).

Stage 4: Final Selection

- Final ranking will be determined by combining the weighted technical (70%) and financial (30%) scores.
- The highest-ranked bidder will be recommended for contract award, representing the best value for money.

11. Application Procedure

Interested and qualified individual consultants or consulting firms are invited to submit a complete application package consisting of the following:

- **Technical Proposal**: Outlining the proposed methodology, analytical framework, and detailed work plan for delivering the assignment.
- **Financial Proposal**: Comprehensive budget with clear breakdowns of professional fees, field logistics, and any other anticipated costs.
- **Team Profiles/CVs**: Detailed curriculum vitae of the proposed research team, highlighting academic qualifications, technical expertise, and relevant professional experience.
- **Evidence of Relevant Experience**: At least two recent examples of similar assignments, preferably ecosystem assessments or climate risk analyses in dryland or pastoral contexts.

All consultants are invited to submit their technical and financial proposals in separate sealed envelopes to the OWDA Jigjiga Office no later than October 3, 2025.

For any inquiries or clarifications, please contact Mr. Abdiwali at abdiwalim@owdaeth.org.

Late submissions will not be considered.