

CTCN TECHNICAL ASSISTANCE REQUEST SUBMISSION FORM

Field

Details

Requesting country or countries

Federal Republic of Somalia

| **Request title** | Digital Solutions for Climate Resilience: Strengthening Early Warning Systems and Climate-Smart Agriculture in Awdal Region, Somalia |

| **NDE** | **Organization:** Ministry of Environment and Climate Change (MOECC),
Somalia

Name: Mr. Abdisalam Nor Ali

Position: Director, ICT Department

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Address: Ministry of Environment and Climate Change, Mogadishu, Somalia |

| **Request Applicant** | **Organization:** Bilan Awdal Organization

Contact Person: Hasan Noor Ahmed

Position: Chairman

Email: [INSERT EMAIL]

Address: Boorama, Awdal Region, Somaliland, Somalia |

Climate Objective

Adaptation to climate change

- Mitigation of climate change
- Combination of adaptation and mitigation of climate change**
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Geographical Scope

- Community level
- Sub-national
- National
- Multi-country

Description of geographical scope:

The technical assistance will focus on **Awdal Region**, specifically **Boorama District and surrounding rural communities** in Somaliland, Somalia. Awdal Region is located in the northwestern part of Somalia, bordering Ethiopia and Djibouti. The region is characterized by semi-arid conditions, high climate vulnerability, and communities dependent on pastoralism and rain-fed agriculture. The pilot interventions will target approximately 50,000 people across 15–20 villages, with the framework designed for replication across other regions of Somalia.

Problem Statement Related to Climate Change

(Up to one page)

Country Context

Somalia is ranked among the most climate-vulnerable nations globally, positioned second on the Notre Dame Global Adaptation Initiative (ND-GAIN) vulnerability index. The country faces recurrent and intensifying climate shocks:

- **Droughts:** Six major droughts have occurred since 2000, with the 2021–2023 drought affecting an estimated 7.8 million people and displacing over 1.5 million internally.
- **Floods:** Seasonal flooding, particularly along the Shabelle and Juba rivers, affects hundreds of thousands annually, destroying crops, infrastructure, and livelihoods.
- **Food Insecurity:** Over 4 million people currently face acute food insecurity (IPC Phase 3 or higher), with climate shocks being a primary driver.
- **Displacement:** Climate-induced displacement exceeds 1.5 million internally displaced persons (IDPs), straining urban centers and humanitarian resources.

Regional Context: Awdal Region

Awdal Region, located in Somaliland, is particularly vulnerable due to its geographic, economic, and infrastructural characteristics:

Indicator	Description
Population	Approximately 673,000 (Somaliland estimate)
Livelihoods	70% pastoralism and agro-pastoralism; 20% rain-fed agriculture; 10% other
Climate	Semi-arid; annual rainfall 200–500mm; highly variable and unpredictable
Key Vulnerabilities	Drought, water scarcity, crop failure, livestock loss, food insecurity

The Climate Problem

Communities in Awdal Region face a critical gap in **climate information and early warning systems**. Despite the increasing frequency and severity of droughts and floods:

- **No localized early warning system exists** to provide communities with advance notice of impending climate hazards.
- **Farmers and pastoralists lack access to weather forecasts** and climate-smart agricultural advisories, leading to planting decisions made without critical information.
- **Water resources are managed reactively** rather than proactively, with no digital tools to monitor or optimize water use during dry periods.
- **Local institutions** (district government, civil society) lack the technical capacity to deploy or maintain digital climate solutions.

The consequence is a cycle of reactive crisis response rather than proactive risk management. When drought occurs, communities face livestock losses, crop failure, and water scarcity before humanitarian assistance arrives. This pattern undermines resilience, perpetuates poverty, and erodes coping mechanisms over time.

Past and On-Going Efforts to Address the Problem

(Up to half a page)

Several initiatives have been undertaken to address climate vulnerability in Somalia, though none have specifically focused on digital early warning systems in Awdal Region:

Initiative	Description	Gaps
FAO Somalia Early Warning System	FAO operates a national early warning system providing seasonal forecasts and food security analysis.	Data is aggregated at national/regional level; does not provide localized, community-level information.

Initiative	Description	Gaps
SWALIM (FAO Somalia Water and Land Information Management)	Provides water and land information services, including satellite data on rainfall and vegetation.	alerts in Awdal.
UNDP Climate Adaptation Projects	Multiple UNDP projects have supported climate adaptation in Somalia, including community-level interventions.	Awdal Region has not been a primary focus; digital technology components are limited.
Ministry of Environment and Climate Change	MOECC has developed Somalia's Nationally Determined Contributions (NDCs) and Technology Needs Assessment (TNA).	Implementation capacity remains constrained; technical assistance needed to operationalize priorities.
Local NGO Engagement	Bilan Awdal Organization and other local NGOs have conducted community awareness and small-scale resilience projects.	Technical capacity for digital solutions is limited; external expertise required.

Despite these efforts, a **critical gap remains** in delivering localized, digital climate information directly to rural communities in Awdal Region through accessible mobile platforms.

Specific Technology Barriers

(Up to one page)

The following technology barriers hinder national and local efforts to address climate vulnerability in Awdal Region:

Barrier 1: Absence of Localized Early Warning Systems

Description: Somalia has no operational system for delivering localized, community-level early warnings for drought and flood risks. While national-level forecasts exist, they are not translated into actionable alerts for rural communities in Awdal.

Impact: Communities receive no advance notice of impending hazards, leaving them unable to take preventive actions such as relocating livestock, conserving water, or adjusting planting schedules.

How CTCN Assistance Will Address: The technical assistance will support the design, development, and pilot deployment of a localized digital early warning system tailored to Awdal's context, utilizing mobile technology to reach rural communities.

Barrier 2: Lack of Mobile-Based Climate Information Services

Description: Despite Somalia's high mobile phone penetration (over 7 million subscribers), there are no accessible mobile platforms providing weather forecasts, climate-smart agricultural advisories, or water management information to smallholder farmers and pastoralists in Awdal.

Impact: Farmers make planting and irrigation decisions without access to weather information, leading to crop failure and inefficient water use. Pastoralists lack information on grazing conditions and water availability.

How CTCN Assistance Will Address: The technical assistance will develop a mobile-based agricultural advisory platform delivering weather forecasts, agronomic advice, and water management recommendations in accessible formats (SMS, voice, or USSD) for users with basic phones.

Barrier 3: Limited Technical Capacity for Digital Solution Deployment

Description: Local institutions—including Awdal district government, MOECC field offices, and civil society organizations—lack the technical expertise to assess, select, deploy, and maintain digital climate technologies.

Impact: Even if technologies were available, local capacity to operate, maintain, and troubleshoot systems is insufficient, threatening sustainability.

How CTCN Assistance Will Address: The technical assistance will include comprehensive capacity building, including training-of-trainers (ToT), hands-on technical mentoring, and development of operation and maintenance manuals.

Barrier 4: Weak Integration of Digital Solutions into National Frameworks

Description: Somalia's NDC, Technology Needs Assessment (TNA), and National Development Plan identify climate technology priorities, but there is a gap in operationalizing these priorities through concrete digital solutions at the sub-national level.

Impact: Digital climate technologies are not systematically integrated into planning, budgeting, or implementation frameworks at district level.

How CTCN Assistance Will Address: The technical assistance will support the development of a scaling framework that integrates lessons learned into national policy, budget planning, and climate finance mobilization.

Barrier 5: Limited Financing for Climate Technology Deployment

Description: While climate finance mechanisms (GCF, GEF, Adaptation Fund) exist, Somalia lacks the project pipeline and technical readiness to access these resources for digital climate solutions.

Impact: Promising technologies cannot be scaled beyond pilot phase due to lack of investment.

How CTCN Assistance Will Address: The technical assistance will identify financing mechanisms, develop investment-ready project concepts, and support linkages to GCF Readiness Programme and other climate finance sources.

Contribution to Programme of Work 2023-2027

System Transformation Areas (mandatory)

- Water-Energy-Food Nexus**
- Sustainable Mobility
- Energy Systems
- Buildings and Infrastructure
- Business and Industry

Key Enablers (optional)

- National Systems of Innovation**
- Digitalization**

Cross-sectoral Themes (optional)

- Gender**
- Youth**

- Indigenous Peoples
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Sectors

- | | |
|--|---|
| <input type="checkbox"/> Coastal zones | <input checked="" type="checkbox"/> Early Warning and Environmental Assessment |
| <input type="checkbox"/> Human Health | <input type="checkbox"/> Infrastructure and Urban planning |
| <input type="checkbox"/> Marine and Fisheries | <input checked="" type="checkbox"/> Water |
| <input checked="" type="checkbox"/> Agriculture | <input type="checkbox"/> Carbon fixation |
| <input type="checkbox"/> Energy Efficiency | <input type="checkbox"/> Forestry |
| <input type="checkbox"/> Industry | <input type="checkbox"/> Renewable energy |
| <input type="checkbox"/> Transport | <input type="checkbox"/> Waste management |

Other relevant sectors: Digital Technology / Information and Communication Technology (ICT)

Technical Assistance Requested

(Up to one page)

Overall Objective

To strengthen climate resilience in Awdal Region, Somalia, through the deployment of digital technologies for localized early warning systems, climate-smart agriculture,

and water management, supported by strengthened local institutional capacity and a framework for national scaling.

Anticipated Groups of Activities

Activity Group 1: Technology Assessment and Selection

- Conduct feasibility study to assess appropriate early warning and digital agriculture technologies for Awdal's context
- Evaluate technology options including mobile platforms, remote sensing integration, and community-based data collection systems
- Engage local communities in participatory technology selection

Activity Group 2: System Design and Development

- Design localized digital early warning system for drought and flood risks
- Develop mobile-based agricultural advisory platform (weather forecasts, agronomic advice, water management)
- Integrate with existing national platforms (MOCT, MOECC) and satellite data sources (FAO SWALIM)
- Conduct pilot testing and iterative refinement

Activity Group 3: Capacity Building and Training

- Develop training curriculum on operation and maintenance of digital systems
- Deliver training-of-trainers (ToT) for local government staff and Bilan Awdal Organization personnel
- Conduct community-level training for farmers and pastoralists on using mobile platforms
- Provide ongoing technical mentoring during pilot implementation

Activity Group 4: Scaling Framework Development

- Document lessons learned and best practices from pilot implementation
- Develop scaling strategy with recommendations for national rollout
- Identify financing mechanisms (GCF, GEF, Adaptation Fund, private sector)

- Support development of investment-ready project concepts

Anticipated Products

Product	Description
Product 1	Feasibility study and technology assessment report for Awdal Region
Product 2	Localized digital early warning system (software platform) operational in pilot communities
Product 3	Mobile-based agricultural advisory platform (SMS/USSD/voice) accessible to smallholder farmers
Product 4	Training curriculum and training-of-trainers (ToT) materials
Product 5	50 local personnel trained (government and civil society)
Product 6	Scaling framework document with financing recommendations for national rollout
Product 7	Investment-ready project concept notes for climate finance mechanisms

Expected Timeframe

Field	Details
Expected duration	15 months (standard CTCN timeframe, with flexibility to extend based on scope)

Anticipated Gender and Other Co-benefits

Gender Linkages

The technical assistance will integrate gender considerations throughout implementation:

Activity	Gender Integration
Needs assessment	Disaggregated data collection to understand gender-specific climate vulnerability information needs
Platform design	Ensure mobile platform accessible to women (including voice-based options for low literacy users)
Training	Target 40% female participation in capacity building; female trainers engaged where possible
Content	Include gender-specific advisories on water management, nutrition, and women's economic activities
Monitoring	Track gender-disaggregated participation and benefit indicators

Anticipated Co-benefits

Co-benefit	Description
Economic	Improved agricultural productivity and reduced crop losses; enhanced livestock management; new income opportunities for youth and women
Social	Strengthened community resilience; reduced displacement; enhanced food security; improved livelihoods
Capacity	Strengthened local institutional capacity; technical skills transfer to Somali professionals

Co-benefit	Description
Cultural	Preservation of traditional knowledge integrated with modern technology; community empowerment
Environmental	Improved water management; sustainable agricultural practices; reduced environmental degradation

Anticipated Follow-up Activities After Technical Assistance Completion

Future Use of Outputs

Output	Anticipated Use
Early warning system	Continued operation and expansion by MOECC and MOCT; integration into national disaster management framework
Mobile advisory platform	Ongoing operation by Bilan Awdal Organization; potential handover to MOCT for national scaling
Training materials	Used by MOECC and local organizations for ongoing capacity building
Scaling framework	Used by MOECC, MOCT, and Ministry of Planning to guide national rollout and budget allocations

Scaling and Next Steps

Phase	Description	Timeline
Pilot expansion	Expand pilot from initial communities to entire Awdal Region	12–24 months post-assistance

Phase	Description	Timeline
National replication	Replicate successful model in other regions (Puntland, Jubaland, South West)	24–48 months plus assistance
Climate finance mobilization	Submit investment-ready concepts to GCF, GEF, Adaptation Fund for scaling	Ongoing from completion

Funding Opportunities

Mechanism	Potential Application
GCF Readiness Programme	Support for scaling framework implementation
GCF Project Preparation Facility (PPF)	Develop full-scale adaptation project
GEF STAR Allocation	Climate adaptation project funding
Adaptation Fund	Community-based adaptation project
Private Sector	Mobile network operator partnerships for platform sustain

Key Stakeholders

Stakeholder	Role to Support Implementation of Technical Assistance
National Designated Entity (NDE)	Ministry of Environment and Climate Change (MOECC) – overall over coordination with CTCN; policy alignment; climate data provision; e alignment with NDC and TNA
Request Applicant	Bilan Awdal Organization – local implementation; community enga beneficiary coordination; monitoring; reporting; local capacity build
Ministry of Communication	Digital infrastructure coordination; technical standards; platform

Stakeholder	Role to Support Implementation of Technical Assistance
and Technology (MOCT)	integration; policy guidance; connection to mobile network operators
Ministry of Environment and Climate Change (MOECC)	Climate policy alignment; data provision (via SWALIM); technical coordination with national climate frameworks
Awdal District Government	Local government coordination; community access; security coordination; local policy alignment
CTCN Network Members	Technology development; technical training; system maintenance and expertise in early warning and digital agriculture
Local Communities (Farmers, Pastoralists)	Beneficiaries; participatory design input; testing and feedback; adoption and use of platforms
Mobile Network Operators	Infrastructure for mobile platform; potential partnership for service delivery
FAO Somalia / SWALIM	Provision of satellite data, rainfall forecasts, and water information for platform integration

Alignment with National Priorities

Reference Document	Extract (Chapter, Page)	Alignment
Nationally Determined Contribution (NDC) (2021)	Chapter 4: Adaptation Priorities – "Strengthening early warning systems and climate information services" (p. 18); Chapter 5: Agriculture and Water – "Promote climate-smart agriculture and water conservation technologies" (p. 22)	Direct alignment: This request supports implementation of ND adaptation priorities in agriculture, water, and early warning systems.
Technology Needs	Agriculture Sector – Priority technologies	Direct alignment: The

Reference Document	Extract (Chapter, Page)	Alignment
Assessment (TNA) (2021)	include "climate information services" and "water management technologies" (p. 35); Cross-cutting – "Digital technologies for climate resilience" (p. 42)	requested technologies (early warning, mobile advisory services) are prioritized in Somalia's TNA.
National Development Plan (NDP-9) (2020–2024)	Pillar 2: Economic Recovery – "Support agricultural productivity and food security" (p. 45); Pillar 4: Infrastructure – "Expand digital infrastructure and services" (p. 67)	Alignment: Contributes to economic recovery, food security, and digital infrastructure priorities.
Somalia Climate Resilience Strategy (Draft)	Strategic Objective 2 – "Strengthen climate information and early warning systems"; Strategic Objective 4 – "Enhance climate-resilient agriculture and water management"	Direct alignment with national climate resilience strategy objectives.
GCF Country Programme (2023–2027)	Priority Area 1 – "Climate-resilient agriculture and food security"; Priority Area 2 – "Water resource management"; Priority Area 3 – "Early warning systems"	Alignment: The request aligns with GCF country programme priorities for Somalia.

Development of the Request

Process of Request Development

This request was developed through a collaborative process involving multiple stakeholders at the national and local levels:

Stage	Description	Stakeholders
Initiation	Bilan Awdal Organization identified climate information gaps	Bilan Awdal

Stage	Description	Stakeholders
	in Awdal Region through community engagement and local needs assessments.	Organization, local communities
Stakeholder Consultation	Bilan Awdal engaged with Ministry of Environment and Climate Change (MOECC) and Ministry of Communication and Technology (MOCT) to discuss technology needs and potential solutions.	Bilan Awdal, MOCT
Technical Scoping	Preliminary technical discussions with MOECC ICT Department and MOCT on appropriate digital solutions and integration with existing national platforms.	MOECC, MOCT, Awdal
Request Formulation	Draft request prepared by Bilan Awdal in collaboration with MOECC NDE, incorporating input from all stakeholders.	Bilan Awdal, MOECC (NDE)
NDE Review and Approval	Request reviewed by MOECC NDE (Mr. Abdisalam Nor Ali) to ensure alignment with national priorities and technical feasibility.	MOECC NDE
Final Approval	Request formally approved by NDE for submission to CTCN.	MOECC NDE

Consultations

Date	Meeting	Participants	Outcomes
[Date]	Initial consultation	Bilan Awdal, MOECC	Identified early warning and digital agriculture as priority technologies
[Date]	Technical meeting	Bilan Awdal, MOCT	Discussed digital infrastructure and mobile platform options
[Date]	Stakeholder workshop	Bilan Awdal, MOECC, MOCT, local	Validated problem statement and proposed approach

Date	Meeting	Participants	Outcomes
		representatives	

Background Documents and Other Information

Document	Link/Attachment	Relevance
Somalia NDC 2021	https://www4.unfccc.int/sites/NDCStaging/Pages/Party.aspx?party=SOM	Direct alignment with adaptation priorities
Somalia Technology Needs Assessment (TNA)	To be attached	Identify climate information services digital technology as priority
National Development Plan (NDP-9)	To be attached	Alignment with economic recovery infrastructure pillars
Somalia Climate Resilience Strategy (Draft)	To be attached	Strategic alignment with early warning climate

Document	Link/Attachment	Relevance
FAO SWALIM Reports	https://www.faoswalim.org/	Data sources for planning and integration
Bilan Awdal Organization Registration Certificate	To be attached	Verification request application

Has this request been developed with the support of the CTCN Request Incubator? Yes No

OPTIONAL: Linkages to Green Climate Fund Readiness and Preparatory Support

- Initial engagement: The GCF NDA of the requesting country has been engaged in the design of this request and the NDA will be involved in the further process leading to an official agreement for accessing GCF readiness support.
- Advanced engagement (preferred):** The GCF NDA of the requesting country has been involved in the design of this request and is a co-signer of this request, the signature includes a provisional agreement to use readiness national funds to support the implementation of technical assistance.

Field Details

NDA name [To be confirmed – Somalia's GCF NDA]

Date [INSERT DATE]

Signature _____

Monitoring and Impact of the Assistance

By signing this request, I affirm that processes are in place in the country to monitor and evaluate the technical assistance provided by the CTCN. I understand that these processes will be explicitly identified in the CTCN Response Plan and that they will be used in the country to monitor the implementation of the technical assistance following standard CTCN procedures. This includes the active engagement as NDE together with the key project proponent / beneficiary in regular project steering meetings.

I understand that, after the completion of the requested assistance, I shall support CTCN efforts to measure the success and effects of the support provided, including its short, medium and long-term impacts in the country. This includes the completion of NDE feedback and post-implementation forms.

Signatures

NDE Name Mr. Abdisalam Nor Ali

Position Director, ICT Department, Ministry of Environment and Climate Change

Date [INSERT DATE]

Signature _____

Request Applicant Name Hasan Noor Ahmed

Position Chairman, Bilan Awdal Organization

Date [INSERT DATE]

Signature _____

Submission Instructions

Field Details

Submit to CTCN@unep.org

Format Word file with digital signature OR signed and scanned PDF with un-signed Word file

Subject Line CTCN TA Request: Digital Solutions for Climate Resilience – Somalia

Next Steps for Bilan Awdal Organization and Partners

Step	Action	Responsible	Timeline
1	Review and finalize request content	Bilan Awdal, MOECC	Immediate
2	Obtain signatures from NDE and Request Applicant	MOECC, Bilan Awdal	Within 1 week
3	Attach supporting documents (registration, CVs, relevant reports)	Bilan Awdal, MOECC	Within 1 week

Step	Action	Responsible	Timeline
4	Submit completed request to CTCN@unep.org	MOECC NDE	Within 2 weeks
5	Await CTCN acknowledgment and response	All partners	2–4 weeks
6	Engage with CTCN on response plan development	MOECC, Bilan Awdal	Ongoing

Would you like me to:

1. **Prepare the accompanying documents** (CVs for key personnel, organization registration template, etc.)?
2. **Draft a cover letter** to accompany submission to CTCN?
3. **Develop a summary presentation** for stakeholder engagement with MOECC and MOCT?
4. **Continue with the arts grants** (Goethe and Slovak) concurrently?

Please confirm any additional information or corrections needed.