

Environmental and Social Management Plan (ESMP)

Ali Daahir Primary Canal Rehabilitation (in Mareerey Village, Afgoye District, Southwest State)

Prepared by

FOOD and AGRICULTURE ORGANIZATION(FAO)

In coordination with

**MINISTRY OF AGRICULTURE AND IRRIGATION SOUTHWEST STATE &
FEDERAL MINISTRY OF AGRICULTURE AND IRRIGATION (FMOAI)**

Under

Somalia Food System Resilience Program (S-FSRP)
Technical Assistance
Component 5: Contingency Emergency Response Component
UTF/SOM/088/SOM

Date: February 2026

LIST OF ABBREVIATIONS

BoQ – Bill of Quantities
CBO – Community-Based Organization
C-ESMP – Contractor Environmental and Social Management Plan
CLO – Community Liaison Officer
CoC – Code of Conduct
EHS – Environmental, Health and Safety
EIA – Environmental Impact Assessment
EPMA – Environmental Protection and Management Act (Somalia, 2024)
ESIA – Environmental and Social Impact Assessment
ESMF – Environmental and Social Management Framework
ESMP – Environmental and Social Management Plan
ES – Environmental Specialist
ESS – Environmental and Social Standards (World Bank)
FAO – Food and Agriculture Organization of the United Nations
FSRP – Food Security and Resilience Project
GBV – Gender-Based Violence
GMP – Grievance Management Procedure
GM – Grievance Mechanism
GoS – Government of Somalia
Ha – Hectare
HSE – Health, Safety and Environment
IAP – Interested and Affected Parties
IDP – Internally Displaced Person
LMP – Labour Management Procedures
MoAI – Ministry of Agriculture and Irrigation
MoECC – Ministry of Environment and Climate Change
NGO – Non-Governmental Organization
OHS – Occupational Health and Safety
OP – Operational Policy
PPE – Personal Protective Equipment
RAP – Resettlement Action Plan
SEA – Sexual Exploitation and Abuse
SH – Sexual Harassment
SEP – Stakeholder Engagement Plan
SMP – Security Management Plan
SRA – Security Risk Assessment
S-FSRP – Somalia Food Security and Resilience Project
SWSSA – Southwest State Specialized Agency
ToR – Terms of Reference
UXO – Unexploded Ordnance
WUA – Water Users Association
WB – World Bank

Table of content

LIST OF ABBREVIATIONS	1
Table of content	2
List of tables	3
List of figures	4
Executive Summary	5
1. Introduction	7
1.1. Purpose of the ESMP	7
1.2. Methodology of ESMP Preparation	8
1.3. Applicability of the ESMP	9
2. Project Description	10
2.1. Existing Canal Condition	11
2.2. Auxiliary Hydraulic Structures	11
2.3. Scope of Rehabilitation Works	12
2.4. Beneficiary Profile	13
2.5. Subproject Prioritization Rationale	14
3. Environmental and social baseline conditions	16
3.1. Environmental Baseline	16
3.1.1. Geographic Setting	16
3.1.2. Climate and Weather Patterns	16
3.1.3. Topography and Geomorphology	17
3.1.4. Soil Characteristics	17
3.1.5. Hydrology and Water Resources	17
3.1.6. Flora and Fauna	17
3.1.7. Environmental Sensitivities	18
3.2. Social Baseline	18
3.2.1. Socio-economic Context	18
3.2.2. Livelihood	18
3.2.3. Administration and Governance	19
3.2.4. Gender Based Violence	19
3.2.5. Access to Water and Electricity	19
3.2.6. Waste Management	19
3.2.7. Cultural Heritage	19
3.2.8. Security	20
4. Legal and regulatory framework	21
5. Environmental and social risks/impacts	23
5.1. Methodology	23
5.2. Positive Impacts	23
5.2.1. Improved Water Distribution and Flow Efficiency	23
5.2.2. Restoration of Irrigated Area and Agricultural Productivity	23
5.2.3. Strengthening of Livelihoods	24
5.2.4. Reduced Water Losses and Maintenance Burden	24
5.2.5. Strengthened Local Water Governance	24
5.3. Environmental Impacts at Rehabilitation Phase	24
5.3.1. Soil Disturbance, Excavation, and Erosion	24
5.3.2. Waste Generation	25
5.3.3. Water Quality Risks	25
5.3.4. Air Quality Impacts (Dust and Emissions)	26
5.3.5. Noise and Vibration	26

5.3.6.	Occupational Health and Safety Hazards	26
5.3.7.	Community Health and Safety Risks	26
5.3.8.	Interaction with SMP/SRA Requirements	27
5.4.	Social Impacts at Rehabilitation Phase	28
5.4.1.	Temporary Disturbance to Farming Activities	28
5.4.2.	Labor Influx Risks	28
5.4.3.	GM Access Limitations	29
5.4.4.	Vulnerable Group Exclusion Risks	29
5.5.	Operational Phase Impacts	30
5.5.1.	Long-Term Positive Water Distribution Equity	30
5.5.2.	Reduced Flooding and Blockages	30
5.5.3.	Maintenance Requirements	30
5.6.	Cumulative Impacts	31
5.7.	Summary of Impacts	31
6.	Environmental and social risks/impacts mitigation plan	34
6.1.	Mitigation Matrix	34
7.	Environmental & Social Monitoring Plan	47
7.1.	Objectives of Environmental and Social Monitoring	47
7.2.	Monitoring Approach	48
7.3.	Environmental and Social Monitoring Matrix	49
7.4.	Incident Reporting Requirements	50
7.5.	Monitoring Documentation and Reporting Schedule	50
7.6.	Capacity Building and Training Plan	51
8.	Implementation Arrangements	53
9.	Stakeholder (community) consultation	55
9.1.	Objectives of Consultation	55
9.2.	Stakeholder Groups Engaged	55
9.3.	Stakeholder consultation Methodology	57
9.4.	Consultation Event Summary	57
10.	Grievance Mechanism	Error! Bookmark not defined.
11.	ESMP Implementation Budget.	66
12.	Annexes	67
	Annex 1. Environmental and Social Screening	67
	Annex 2: Public Consultation Documentation template/form-Completed	72
	Annex 3: Summary of the community meeting	74
	Annex 4: Consultation attendants/Participants	75
	Annex 5: Community Consultation photos	76
	Annex 6: Land ownership documents	77
	Annex 7: Chance Find Procedure (CFP)	78
	Annex 9 : Engineering Designs	81

List of tables

Table 1-	Location of Intake, Division boxes and Culverts with its GPS locations	13
Table 2-	Information on canal information and condition	14
Table 3-	Canal dimensions	15
Table 4 -	Summary of impacts	31
Table 5-	Summary of the Environmental and Social Risks and Impacts during rehabilitation and operation phases	32

Table 6 - Environmental and Social Mitigation Measures Tables-----	34
Table 7 - Roles and Responsibilities -----	37
Table 8 - Environmental & Social Mitigation Plan for Ali Daahir Primary Canal Subproject -----	37
Table 9 - Environmental & Social Monitoring Plan-----	47
Table 10 - Environmental & Social Monitoring Framework-----	49
Table 11 - Summary of Capacity Building Plan -----	51
Table 12 - Implementation arrangement - main institutional responsibilities are as follows -----	53
Table 13 - The Key issues raised during the consultation -----	58
Table 14 - Response to the issues Key raised by the community-----	59
Table 15 - GM Contacts-----	61
Table 16 - GM Resolution- Record contact details -----	63
Table 17 - GM Contacts and awareness raising details -----	64
Table 18 - ESMP Budget Breakdown -----	66

List of figures

Figure 1- Geo-Map photo of the canal-----	10
Figure 2: Geo-Map photo of the canal -----	10
Figure 3 - Canal Condition-----	14
Figure 4 - Canal Condition-----	15
Figure 5- FAO Grievance Mechanism-----	61

Executive Summary

This Environmental and Social Management Plan (ESMP) has been prepared for the rehabilitation of the Ali Daahir Primary Canal, located in Mareerey village, Afgoye District, Lower Shabelle Region, Southwest State, Somalia. This subproject forms part of the World Bank–financed Somalia Food Systems Resilience Project (S-FSRP). S-FSRP is a six-year initiative (2023–2029) to enhance Somalia’s preparedness against food insecurity and strengthen the resilience of food systems. The project addresses structural vulnerabilities to climate shocks, conflict, and other crises through investments along four key pathways: revitalizing agri-livestock research institutions and seed systems; improving water availability and rangeland management; enhancing market integration through food safety and value addition; and establishing supportive policy and institutional frameworks.

The Food and Agriculture Organization of the United Nations (FAO) in Somalia is implementing a Technical Assistance (TA) activity under Component 5, the Contingent Emergency Response Component (CERC), under S-FSRP. While the broader S-FSRP supports sustainable livelihoods through investments in agricultural research, water and rangeland management, market integration, and policy frameworks, the FAO-led TA focuses specifically on improving flood risk and irrigation water management. The canal rehabilitation is one of the priority investments under Component 5, which focuses on restoring irrigation assets, improving water management, and enhancing agricultural resilience.

The Ali Daahir Primary Canal is a 1.0-kilometre irrigation conveyance system that historically irrigated 35 hectares of farmland and supported 40 farmers. Due to prolonged siltation, narrowing of the canal cross-section (from an average width of approximately 0.8 m to 0.35 m) and reduced effective depth (from about 0.6 m to 0.4 m), bank erosion, vegetation encroachment, deterioration of auxiliary structures, and lack of routine maintenance, the functional irrigated area has reduced to 23.6 hectares, and the number of active farmers has decreased to 25. This represents an approximate 32.6% reduction in irrigated land and 37.5% reduction in beneficiary farmers, resulting in reduced water availability, productivity losses, and heightened vulnerability of farming households.

The rehabilitation works include full mechanical excavation and desilting of the entire 1,000-metre canal, clearance of obstructive vegetation and debris, and reshaping of the canal cross-section to restore optimal hydraulic geometry and conveyance efficiency. In addition, the works will involve the rehabilitation or reconstruction of one intake structure, six division boxes, and one culvert using reinforced concrete, alongside targeted bank reshaping and stabilization to address erosion and seepage losses. These improvements are expected to restore hydraulic performance, reduce conveyance losses and siltation, improve water distribution equity—particularly for midstream and tail-end users—and strengthen long-term agricultural productivity across the 23.6-hectare command area.

This ESMP has been prepared to identify and manage the environmental and social risks associated with the rehabilitation of the Ali Daahir Primary Canal, following consultations with farmers, local leaders, the Afgoye Canal Committee, and relevant Southwest State authorities. A total of 25 community participants (20 men and 5 women) were engaged to capture local knowledge, irrigation challenges, and priority concerns, which have been integrated into the ESMP. The project benefits 25 farming households in Mareerey and is classified as Moderate Risk under the S-FSRP Environmental and Social Management Framework (ESMF). Key risks are limited to the rehabilitation phase and include worker safety hazards, community safety concerns, temporary disruption of irrigation and farm access, dust and noise generation, and risks

associated with labor influx and construction waste management. No land acquisition or displacement is required, as works remain within the existing canal footprint.

The ESMP outlines mitigation and monitoring measures, roles and responsibilities, and reporting requirements, and has been developed in line with the World Bank Environmental and Social Framework (ESF), national environmental legislation (including the Environmental Protection and Management Act 2024 and Somalia ESIA Regulations 2024), FAO’s Environmental and Social Standards, and guidance from the Southwest State Ministry of Agriculture and Irrigation (MoAI) and environmental authorities. The contractor will be required to fully implement all ESMP measures—covering occupational health and safety, community health and safety, and good construction and waste management practices—under the oversight of FAO, the Ministry of Environment and Climate Change, the Southwest State Environmental Authority, and relevant government counterparts.

Key risks associated with the Ali Daahir Primary Canal rehabilitation include occupational health and safety hazards, temporary irrigation disruptions, dust impacts on nearby households, and climate-related construction risks. These risks will be mitigated through implementation of a Contractor ESMP (C-ESMP), strict OHS protocols, phased construction scheduling, dust suppression measures, and continuous stakeholder engagement consistent with the World Bank Environmental and Social Framework.

1. Introduction

The Ali Daahir Primary Canal in Mareerey Village, Afgoye District, in the Lower Shabelle Region of Southwest State, is a core irrigation conveyance system within one of Somalia's important agricultural production zones. The canal extends approximately 1,000 meters, beginning at GPS coordinate 2.141134°N, 45.093339°E and ending at 2.132547°N, 45.094975°E, serving the farming communities of Mareerey and adjacent farmlands

Historically, the canal irrigated approximately 35 hectares of farmland and supported 40 farmers. Due to progressive siltation, structural failures in auxiliary hydraulic structures, reduction in effective canal width (from about 0.8 m to 0.35 m) and depth (from about 0.6 m to 0.4 m), and insufficient water conveyance efficiency, the effective service area has decreased to 23.6 hectares, representing an approximate 32.6% reduction in irrigated land. Similarly, the number of beneficiary farmers has declined from 40 to 25, indicating an approximate 37.5% reduction in agricultural users dependent on the canal. These losses reflect long-term underperformance of the system and provide strong justification for prioritizing rehabilitation under S-FSRP.

Once rehabilitated, the Ali Daahir Primary Canal is expected to deliver benefits including increased irrigation reliability, better water distribution equity, reduced conveyance losses, and improved agricultural yields for the canal beneficiaries. This ESMP has been prepared to ensure that all environmental and social risks associated with the rehabilitation works are clearly identified, properly managed, and addressed throughout implementation.

1.1. Purpose of the ESMP

This Environmental and Social Management Plan (ESMP) has been prepared for the rehabilitation of the Ali Daahir Primary Canal, located in Mareerey Village, Afgoye District, Lower Shabelle Region, within the Southwest State of Somalia, and has been categorized as Category C (moderate risk). The canal is one of several irrigation systems prioritized for assessment by local stakeholders, including the Afgoye Canal Committee and the Southwest State Ministry of Agriculture and Irrigation, reflecting its strategic importance for local irrigation and food production.

Although all canals assessed under Subproject A are in urgent need of rehabilitation due to prolonged degradation, the Ali Daahir Primary Canal was advanced for ESMP preparation and rehabilitation planning based on:

- Strong stakeholder prioritization
- Availability of complete and reliable baseline data
- Readiness for engineering design, costing, and sequencing within the Subproject A implementation plan

The ESMP provides a structured approach for:

- Identifying the environmental and social risks associated with the rehabilitation works
- Proposing appropriate mitigation and monitoring measures
- Establishing clear institutional roles, responsibilities, and reporting arrangements
- Ensuring compliance with national environmental regulations, World Bank Environmental and Social Standards (ESSs), and FAO safeguard requirements
- Supporting safe, inclusive, and sustainable implementation of the canal rehabilitation activities

1.2. Methodology of ESMP Preparation

The preparation of this ESMP for the Ali Daahir Primary Canal was based on a comprehensive and structured methodological approach, consistent with the World Bank Environmental and Social Framework (ESF), FAO safeguards, and national regulatory requirements.

The process began with extensive field assessments, during which FAO safeguard specialists, engineers from the Southwest State Ministry of Agriculture and Irrigation (MoAI), the Afgoye Canal Committee, and local community leaders jointly inspected the Ali Daahir Primary Canal. These site visits enabled documentation of existing canal conditions, including sediment deposition, bank erosion, vegetation encroachment, seepage, and the structural integrity of the auxiliary hydraulic structures along the 1 km canal reach (one intake structure, one crossing culvert, and six division boxes). Observations from the field formed the technical foundation for defining the scope of rehabilitation works.

An Environmental and Social Screening (ESS) was conducted using the S-FSRP Environmental and Social Screening Form to determine the project's risk category and identify the key environmental and social issues requiring management. The outcomes of the screening, including risk classification, initial impact identification, and required safeguard instruments directly informed the design of this ESMP and the level of detail needed for impact assessment and mitigation planning.

The ESMP preparation further relied on an in-depth review of applicable standards, laws, and regulations, ensuring that the document aligns with the World Bank ESF, the Environmental Protection and Management Act (EPMA) 2024, the Somalia ESIA Regulations 2024, FAO's Environmental and Social Standards, and the World Bank Group Environmental, Health, and Safety (EHS) Guidelines, as well as Good International Industry Practice (GIIP). This legal and regulatory review ensured that all recommended mitigation, monitoring, reporting, and institutional arrangements are compliant with both international and national requirements.

Stakeholder consultations were conducted as an integral part of ESMP preparation. These engagements involved farmers, women farmers, elders, and other canal users who rely on the Ali Daahir Primary Canal for irrigation. A total of 25 participants (20 men and 5 women) provided practical insights regarding irrigation challenges, water distribution constraints, impacts of deteriorated structures, community health and safety concerns, and expectations for rehabilitation. Their input was incorporated into the risk assessment, mitigation measures, and the design of the project's Grievance Mechanism (GM).

The process also included substantive institutional engagement, involving consultations with the Ministry of Environment and Climate Change (MoECC), the Southwest State Environmental Authority, and MoAI technical counterparts. These discussions clarified state-level permitting requirements, environmental review procedures, and compliance responsibilities during implementation.

Lastly, the preparation of the ESMP incorporated a detailed review of engineering designs and technical assessments, including canal surveys, structural inventories, hydrological information, and design drawings for the Ali Daahir Primary Canal. This ensured that environmental and social considerations were fully integrated into engineering decisions and that the ESMP reflects the actual scope, scale, and technical nature of the proposed rehabilitation works.

1.3. Applicability of the ESMP

This ESMP applies to all individuals and entities involved in the planning, execution, supervision, and oversight of the Ali Daahir Primary Canal rehabilitation. This includes contractors and subcontractors responsible for executing the works; FAO and S-FSRP technical, engineering, and safeguards staff who provide oversight; MoAI engineers and technical departments; and the Ministry of Environment and Climate Change (Southwest State) and its Environmental Authority responsible for regulatory oversight and permitting.

It also applies to community-level structures such as the Water User Association (WUA), the Afgoye Canal Committee, and other community representatives who support coordination, communication, and monitoring at the local level. Supervising engineers and technical oversight teams are required to use this ESMP as the principal reference document for ensuring compliance with environmental and social management requirements.

Overall, this ESMP serves as the operational guide for managing environmental and social performance throughout the rehabilitation of the Ali Daahir Primary Canal, defining what must be done, by whom, to what standard, and under what monitoring and reporting arrangements.

1.4 Climate Risk Screening Summary

The Ali Daahir Primary Canal rehabilitation has been screened for climate and disaster-related risks in accordance with World Bank Climate and Disaster Risk Screening guidance. The project area within Afgoye District is exposed to recurrent drought conditions, high evapotranspiration rates, and seasonal flooding associated with the Shabelle River during the Gu (April–June) and Deyr (October–December) rainy seasons.

Climate-related risks include embankment erosion during peak river discharge, sediment accumulation reducing canal conveyance capacity, extreme heat affecting worker safety, and localized flooding during construction activities. The rehabilitation integrates climate resilience measures including restoration of hydraulic capacity, embankment reshaping and mechanical compaction, slope stabilization, and construction scheduling outside peak flood periods where feasible. Residual climate risk is assessed as Moderate and manageable through routine inspection and maintenance.

2. Project Description

The Ali Daahir Primary Canal is a critical irrigation canal system serving the farming communities of Mareerey village in Afgoye District, Lower Shabelle Region, within Southwest State of Somalia. The canal supports agricultural production across a productive command area in a semi-arid environment where rainfall is seasonal, unreliable, and insufficient to sustain consistent crop cultivation without supplementary irrigation. Over several years, the canal has experienced progressive deterioration due to sediment accumulation, bank erosion, vegetation encroachment, and damage to auxiliary hydraulic structures, resulting in reduced hydraulic efficiency and negatively affecting the livelihoods of dependent households.

Assessed under Subproject A of the Somalia Food Systems Resilience Program (S-FSRP), the canal was prioritized for rehabilitation based on stakeholder recommendation, availability of a complete baseline dataset, and readiness for engineering analysis and costing. Although all canals under Subproject A require urgent rehabilitation, the Ali Daahir Primary Canal was advanced due to its strategic importance for Mareerey village and its direct contribution to agricultural productivity along the Shabelle corridor.



Figure 1- Geo-Map photo of the canal

The Ali Daahir Primary Canal extends approximately 1.0 kilometer (1,000 meters) from GPS coordinates 2.141134°N, 45.093339°E at the intake to 2.132547°N, 45.094975°E at the downstream end. Historically, the canal has irrigated 35 hectares of farmland. Due to sediment accumulation, weakened embankments, and reduced flow conveyance, the current functional irrigated area has declined to 23.6 hectares, representing a 32.6 percent loss in irrigated area. Over the same period, the number of active beneficiary farmers has decreased from 40 to 25, reflecting a 37.5 percent decline in households relying on the canal for irrigation and livelihoods. This decline is driven by land subdivision among extended families, reduced access to reliable water for some plots due to conveyance inefficiencies, and flow constraints during peak agricultural seasons.

The rehabilitation activities include mechanical excavation and desilting of the entire canal length, reshaping the canal prism, stabilizing eroded banks, and reconstructing or rehabilitating the auxiliary hydraulic structures, as detailed in the technical design and Bill of Quantities (BOQ). The works will be carried out over a defined rehabilitation period and will involve a workforce supervised by a site supervisor and supported by skilled and unskilled laborers, along with heavy

machinery such as excavators, bulldozers, tipper trucks, loaders, compactors, and concrete mixers. Construction materials including cement, sand and aggregates, reinforcement steel, and formwork timber will be used for rebuilding the intake, division boxes, and the culvert. Excavated spoil and debris will be transported and disposed of at pre-identified locations agreed with community leaders and the Southwest State Environmental Authority.

These activities are designed to restore the hydraulic integrity of the canal, improve conveyance efficiency, and re-establish equitable water distribution across the full 23.6-hectare command area. The rehabilitation works are expected to strengthen climate resilience, stabilize agricultural productivity, and improve the livelihoods of farming households dependent on the Ali Daahir Primary Canal.

2.1. Existing Canal Condition

A joint field assessment was conducted by the FAO safeguards team, the Federal Ministry of Agriculture and Irrigation (MoAI), the Southwest State Ministry of Agriculture and Irrigation, and the local canal committee. The mission inspected the full Ali Daahir Primary Canal corridor and documented the following conditions:

- The canal channel is heavily silted along much of its length, reducing depth, slope continuity, and flow velocity, and restricting water availability to downstream sections.
- Widespread bank erosion was observed, driven by dense vegetation growth, unregulated runoff, livestock trampling, and prolonged water stagnation along weakened embankments.
- Overall conveyance capacity is diminished, with midstream and tail-end farmers experiencing reduced water pressure and intermittent flow disruptions during periods of high demand.
- Seepage losses occur along shallow, degraded sections of the canal, reducing irrigation efficiency and dependable water delivery.
- Vegetation and debris accumulation at critical points obstruct flow and contribute to localized overtopping during periods of increased flow.

As confirmed during the technical assessment, the Ali Daahir Primary Canal will remain an earth canal, with rehabilitation works centered on mechanical excavation, reshaping of the canal prism, clearance of deposited sediments, removal of vegetation, and restoration of canal geometry to improve flow continuity. No concrete lining is proposed for the canal itself, in line with farmer preferences and prevailing engineering practices in the Afgoye irrigation system.

2.2. Auxiliary Hydraulic Structures

Along its 1.0 km length, the Ali Daahir Primary Canal contains a total of 8 functional and partially deteriorated auxiliary hydraulic structures, consisting of:

- 1 concrete intake structure
- 6 division boxes
- 1 crossing culvert

Field inspections identified the following issues:

- The intake structure shows sediment buildup at the downstream apron and partial wear on concrete surfaces, limiting regulated inflow during low-water periods.
- Several of the six division boxes exhibit structural deterioration, including broken gates, sediment accumulation, and misaligned outlets that restrict equitable water distribution to adjacent plots.

- The single culvert shows partial blockage, minor undermining of footings, and localized erosion at inlet and outlet zones, reducing cross-drainage efficiency during rainfall and high-flow conditions.

The technical assessment determined that all auxiliary structures requiring intervention will be rehabilitated or reconstructed using reinforced concrete, in line with engineering standards applicable to small-scale irrigation systems and the S-FSRP design framework, to ensure durability, structural stability, and reliable water management performance.

2.3. Scope of Rehabilitation Works

The key activities proposed under the rehabilitation of the Ali Daahir Primary Canal include:

- Mechanical excavation and desilting along the full 1,000-meter length of the canal to remove silt, accumulated debris, vegetation, and other obstructions restricting flow.
- Reshaping of canal cross-sections to restore uniform flow geometry and hydraulic slope, improve conveyance efficiency, and ensure proper water delivery to downstream sections and tail-end farmers.
- Reconstruction/rehabilitation of auxiliary structures, including:
 - 1 reinforced-concrete intake structure
 - 6 reinforced-concrete division boxes
 - 1 reinforced-concrete crossing culvert
- to restore their structural integrity and functionality for controlled water distribution and safe cross-drainage.
- Debris removal and safe disposal of excavated spoil at approved locations identified jointly with community leaders and the Southwest State Environmental Authority, consistent with applicable environmental guidelines.
- Minor embankment repairs and stabilization to reinforce structurally weak segments, correct erosion-prone areas, and prevent further bank collapse.
- Regrading of the canal bottom to correct irregular gradients and ponded segments that obstruct flow, ensuring continuous conveyance from the intake to the downstream end.
- Removal of vegetation and invasive root systems along the canal alignment that reduce the effective flow area, contribute to sediment trapping, and accelerate structural degradation.
- These combined interventions will significantly improve water distribution, reduce conveyance losses, and restore the canal's performance to reliably support the entire 23.6-hectare command area, while improving irrigation reliability for the 25 farmers currently dependent on the Ali Daahir Primary Canal.

2.3.1 Construction Methodology and Sequencing

Rehabilitation of the Ali Daahir Primary Canal will follow a phased and structured approach to ensure safety and minimize disruption to irrigation users. The sequence of works includes:

- (i) site demarcation and installation of warning signage;
- (ii) mechanical excavation and desilting of canal sections;
- (iii) embankment reshaping, grading, and compaction to restore structural stability;
- (iv) rehabilitation of intake structures, culverts, and division boxes using reinforced concrete;
- (v) curing and inspection of structural works; and
- (vi) site reinstatement and removal of excess spoil and debris.

All activities will be implemented in accordance with Good International Industry Practice (GIIP) and supervised by the designated Supervising Engineer.

2.3.2 Occupational Health and Safety Measures During Construction

The contractor shall implement comprehensive Occupational Health and Safety (OHS) measures during canal rehabilitation activities. These include mandatory use of personal protective equipment (helmets, gloves, boots, reflective vests), trench safety controls, machinery operation

safety briefings, heat stress management procedures, provision of potable water and shaded rest areas, and availability of first-aid kits on site.

Daily toolbox talks shall be conducted prior to commencement of works. OHS compliance will be monitored in accordance with ESS2 and the World Bank General Environmental, Health and Safety (EHS) Guidelines.

2.3.3 Water Abstraction Clarification

The rehabilitation of the Ali Daahir Primary Canal does not introduce new abstraction structures nor increase water withdrawal volumes from the Shabelle River beyond historical diversion levels. The intervention is limited to restoring hydraulic efficiency within the existing canal alignment. Therefore, no additional abstraction impacts on downstream water users are anticipated.

Table 1- Location of Intake, Division boxes and Culverts with its GPS locations

No.	Division boxes, culverts and intake	Coordinates	
1	Intake this structure is functioning properly and does not require rehabilitation.	236640.317	510383.7
2	Access road: This access road is in good condition and does not require rehabilitation.	236630.704	510384.952
3	proposed division box	236464.927	510416.581
6	proposed division box	236244.202	510413.98
7	proposed division box	236135.947	510416.252
8	proposed division box	236049.903	510437.762
9	proposed division box	235855.104	510496.489
10	proposed division box	235777.504	510524.543

All construction and earthworks will follow Good International Industry Practice (GIIP), World Bank Group EHS Guidelines, and National ESIA Regulations 2024.

2.4. Beneficiary Profile

The Ali Daahir Primary Canal currently serves 25 farmers within Mareerey village and the surrounding farmlands of Afgoye District in the Lower Shabelle Region. These farmers rely on the canal as their primary source of irrigation for crops such as maize, sesame, tomatoes, onions, leafy vegetables, bananas, and fodder for livestock production.

Historically, the canal supported an irrigated command area of 35 hectares serving 40 farmers. The reduction in irrigated area to 23.6 hectares and the decline in active water users from 40 to 25 farmers have intensified pressure on the remaining productive land and reduced overall agricultural output.

Field consultations confirmed that farmers increasingly depend on shallow wells and periodic river pumping to compensate for unreliable canal flow, blockages from silt and vegetation, and reduced delivery at midstream and tail-end sections. This situation has raised production costs, reduced cropping frequency, and negatively affected agricultural productivity, household food security, and overall community resilience, underscoring the urgency of restoring reliable water delivery through the Ali Daahir Primary Canal.


2.5. Subproject Prioritization Rationale

Although all canals assessed under the broader Afgoye irrigation rehabilitation initiative exhibit significant rehabilitation needs, the Ali Daahir Primary Canal was prioritized for early intervention under Subproject A due to:

- Stakeholder recommendation, including the Afgoye Canal Committee and the Southwest State Ministry of Agriculture and Irrigation, who identified the canal as a priority system supporting irrigated agriculture in Mareerey village.
- Availability of complete and validated baseline data, including GPS coordinates, structural inventory (intake, division boxes, culvert), topographic measurements, and community consultation records, allowing faster finalization of technical design and safeguards documentation.
- Severity of functionality loss, reflected in sedimentation, weak embankments, deteriorated hydraulic structures, and vegetation-related flow obstructions that have reduced flow reliability and particularly affected midstream and tail-end users, contributing to a 32.6 percent reduction in irrigated area and a 37.5 percent decline in active beneficiary farmers.
- Strategic location within a productive agricultural zone of Lower Shabelle, where the canal underpins local food production, market supply, and irrigated livelihood systems.

This prioritization does not indicate that the Ali Daahir Primary Canal is more urgent than other canals; rather, it reflects implementation readiness, documentation completeness, and the need to advance Subproject A for timely budgeting and procurement estimation

Table 2- Information on canal information and condition

Stations	Structure Type	Condition Description	Photo Reference	GPS	Recommended Action
0+000	Canal condition	<ul style="list-style-type: none"> • Deteriorated bank integrity and heavy sediment accumulation. • And needs site clearance 	 <p>Figure 3 - Canal Condition</p>	2.13898 8,45.093 693	The immediate and most critical action is to restore the canal's hydraulic capacity by removing the buildup of sediment.


0+500	Proposed Crossing Culvert	Currently, there is no existing culvert structure. Water passes beneath the road through a temporary buried pipe, which is inadequate for proper discharge and often causes blockage during heavy flow.	 <p>Figure 4 - Canal Condition</p>	2.134507, 45.094192	It is recommended to construct a new reinforced concrete culvert (4.9 m wide) to facilitate smooth canal water flow beneath the access road. The structure should include properly compacted approaches, headwalls, and wing walls to prevent erosion and ensure long-term durability.
-------	---------------------------	---	---	---------------------	--

Table 3-Canal dimensions

No	District	Village	Name of canals	Length of canal now (m)	Length of canal before it deteriorated (m)	Width of canal now (m)	Width of canal before it deteriorated (m)	Depth of canal now (m)	Depth of canal before it deteriorated (m)	Area irrigated by canal now (Ha)	Area irrigated before canal became bad (Ha)	Number of farmers using canal now	Number of farmers using the canal before canal became bad
1	Afgoye	Marerey	Ali Dahir Primary canal	1000	1000	0.35	0.8	0.4	0.6	23.6	35	25	40

3. Environmental and social baseline conditions

This section provides an overview of the environmental conditions within the Ali Daahir Primary Canal, located in Mareerey village, Afgoye District, Lower Shabelle Region, Southwest State of Somalia. The baseline assessment draws on field observations, district-level environmental datasets, consultations with local authorities, and FAO/S-FSRP environmental screening exercises. It establishes the reference conditions against which potential environmental impacts of the rehabilitation works will be evaluated.

3.1. Environmental Baseline

The Ali Daahir Primary Canal lies within the semi-arid landscape of Afgoye District, where low and unpredictable rainfall makes irrigation essential for agriculture. The canal corridor, which is approximately 1.0 km (1,000 m) in length, is characterized by alluvial soils that are fertile but easily eroded when disturbed, and by light vegetation consisting mainly of grasses and shrubs that have encroached into the silted canal bed. The canal's cross-section has deteriorated over time from an original width of about 0.8 m and depth of 0.6 m to a current reduced width of about 0.35 m and depth of 0.4 m, reflecting significant sedimentation and narrowing.

No sensitive ecological habitats or protected areas are present within the project footprint. Overall, the environmental setting reflects a degraded irrigation system affected by sedimentation, vegetation overgrowth, reduced hydraulic efficiency, and shrinking irrigated area, underscoring the need for rehabilitation to restore reliable water flow.

3.1.1. Geographic Setting

The Ali Daahir Primary Canal is located in Mareerey village, within the agricultural belt of Afgoye District, one of the most productive zones in Southwest State. The district is situated along the Shabelle River, which provides the primary source of irrigation water for surrounding farmlands. The canal serves farms located on relatively flat alluvial plains with gradual slopes, conducive to gravity-fed irrigation.

The project area is characterized by dispersed farming settlements, smallholder agricultural plots, seasonally vegetated open areas, and clusters of riparian vegetation near the Shabelle River. There are no protected areas, forest reserves, or critical natural habitats within or adjacent to the Ali Daahir canal corridor.

3.1.2. Climate and Weather Patterns

Afgoye District experiences a semi-arid to sub-humid tropical climate with a bimodal rainfall pattern influenced by the Indian Ocean monsoon system. The main rainy seasons are the Gu rains (April–June), which provide most of the surface water and aquifer recharge, and the Deyr rains (October–December), which form the secondary wet season. The dry periods, Jilaal (January–March) and Hagaa (July–September), are characterized by high temperatures and pronounced water scarcity.

Average annual rainfall ranges between 450 and 550 mm, with significant variability from year to year. Temperatures range from 23 to 35°C, and evaporation rates exceed annual rainfall, creating a heavy reliance on the Shabelle River for irrigation. Key climate-related stresses affecting the Ali Daahir canal corridor include recurrent drought conditions, high evapotranspiration, seasonal flooding along the Shabelle River, and siltation caused by runoff and unstable riverbanks. These factors directly influence water availability, sediment deposition, and the overall efficiency and reliability of the irrigation system.

3.1.3. Topography and Geomorphology

The Ali Daahir canal corridor is mostly flat, with gentle natural slopes that make gravity-fed irrigation feasible over its 1.0 km length. The geomorphology is characterized by young alluvial deposits, silty clay and sandy loam soils, with seasonal sediment deposition from river overflows and slightly elevated natural levees along the riverbank.

Erosional processes observed in canals of this area, and anticipated for Ali Daahir, include bank collapse in unstable sections, scour around culverts, and sediment accumulation in slow-moving reaches. These geomorphic characteristics influence canal stability, maintenance requirements, and long-term hydraulic performance.

3.1.4. Soil Characteristics

Soils along the Ali Daahir Primary Canal are mainly alluvial sandy loam and silty clay, which support crop cultivation. They are moderately fertile but vulnerable to erosion and over-cultivation. The soils are also relatively permeable, contributing to infiltration-related water losses in unlined canal sections.

Soil-related constraints observed in similar Afgoye canals, and applicable here, include sediment accumulation resulting from upstream topsoil erosion, compaction in certain segments caused by livestock movement, and localized slumping due to inadequate embankment stabilization. These conditions highlight the need for periodic desilting, reshaping, and reinforcement of embankments to maintain consistent water conveyance.

3.1.5. Hydrology and Water Resources

The Shabelle River is the primary source of irrigation water for the Ali Daahir Primary Canal corridor. Peak flows occur during the Gu and Deyr seasons, while dry-season flows reduce significantly, affecting water distribution reliability, especially for tail-end farmers.

High sediment loads during the onset of rains contribute to rapid canal siltation and blockages at division boxes and culverts, and this is reflected in the reduced canal dimensions (now 0.35 m wide and 0.4 m deep compared to the original 0.8 m width and 0.6 m depth). Hydrological observations in similar Afgoye canals indicate severely reduced flow velocity due to accumulated sediments, restricted water delivery to downstream users, and localized risks of overtopping or backflow in areas where structures have collapsed or become obstructed.

No groundwater abstraction is associated with the project's work within the Ali Daahir canal corridor.

3.1.6. Surface Water Quality Baseline

The Shabelle River provides irrigation water to the Ali Daahir Canal command area. River water quality varies seasonally, with increased turbidity and suspended sediment loads during Gu and Deyr rainy seasons. Although laboratory parameters such as TDS, TSS, and pH were not measured during ESMP preparation, long-standing irrigation practices indicate suitability for agricultural production within the canal command area. No industrial discharge sources were identified near the canal alignment.

3.1.7. Groundwater Conditions

Shallow groundwater exists within the Afgoye alluvial plains, with seasonal variations influenced by river levels. Some farmers may rely on shallow wells during temporary canal interruptions. The rehabilitation works are confined to the canal prism and are not expected to intersect groundwater tables or affect nearby wells.

3.1.8. Flora and Fauna

Vegetation within the project area is dominated by grasses, shrubs, scattered acacia trees, riparian vegetation along the Shabelle River, and seasonal weeds or invasive grasses within the canal bed. No endangered species, critical habitats, or ecologically sensitive areas were identified in or around the project footprint.

Faunal presence mainly includes livestock such as cattle, goats, and donkeys, domestic animals, and a variety of small mammals, reptiles, and commonly occurring bird species. The proposed project works are not expected to adversely affect any protected species or habitats.

3.1.9. Environmental Sensitivities

The Ali Daahir project area exhibits several environmental sensitivities that require consideration during rehabilitation activities. These include erosion-prone soils along canal embankments, high sediment loads from upstream catchments, localized flood risks near culvert-constrained areas, and dense vegetation obstructing water flow.

The corridor is also closely surrounded by actively cultivated farmland, increasing the risk of disturbing crops during rehabilitation. No cultural heritage resources, wetlands, forest reserves, or formally designated conservation areas were identified within the canal corridor.

3.1.10 Sensitive Environmental and Social Receptors

The Ali Daahir Primary Canal corridor is surrounded by cultivated farmland and dispersed rural dwellings. While no formal schools or health facilities are located within the immediate excavation footprint, farmers, agricultural laborers, women working in fields, and livestock regularly access canal banks. These receptors necessitate implementation of construction safety measures including signage, controlled access, and phased work scheduling.

3.2. Social Baseline

3.2.1. Socio-economic Context

Afgoye District, including Mareerey village, is one of the most densely populated agricultural hubs in Southwest State. Its proximity to Mogadishu and its location along the Shabelle River makes it a major food-producing area and a central trade corridor for farmers, livestock owners, and local markets. The district hosts both long-term residents and a significant number of internally displaced persons (IDPs) fleeing drought and conflict from surrounding regions.

Communities depend heavily on irrigated farming and livestock production, yet recurring droughts, erratic rainfall, and river flow variability continue to affect household incomes and food security. Social cohesion is strong, with the community structure comprising elders, religious leaders, and water committees who play an important role in local governance and conflict mediation. However, increasing pressure on land and water resources has heightened vulnerabilities, particularly for poor farmers and households with limited assets, including those depending on the Ali Daahir canal command area.

3.2.2. Livelihood

Agriculture forms the backbone of Afgoye's rural economy, including in Mareerey. Households cultivate maize, sesame, vegetables, mangoes, papayas, bananas, and fodder crops using irrigation channels connected to the Shabelle River, such as the Ali Daahir Primary Canal. Livestock such as cattle, goats, sheep, and donkeys are an essential livelihood and financial asset.

Years of drought and canal degradation have reduced agricultural yields and created seasonal food shortages, forcing some households to rely on casual labor, charcoal production, or small-scale trade. Women often engage in fruit and vegetable marketing, on-farm processing, and small

businesses, although their access to land and water resources is frequently limited. Farmers consistently highlight silted canals, poor maintenance, and disrupted irrigation—including reduced irrigated area along Ali Daahir (down from 35 ha to 23.6 ha)—as the primary constraints affecting productivity.

3.2.3. Administration and Governance

Afgoye District is governed under the Southwest State administrative structure, with district authorities overseeing security, dispute resolution, and coordination of basic services. At the community level, traditional elders, village committees, and Water User Associations (WUAs) play important roles in managing natural resources, settling disputes, and organizing maintenance of irrigation schemes, including those served by the Ali Daahir Primary Canal.

These community institutions are well-established and widely respected, though their capacity is limited by resource shortages and the scale of infrastructure degradation. Coordination between MoAI, local government, and community structures remains essential for effective implementation and long-term sustainability of irrigation rehabilitation.

3.2.4. Gender Based Violence

GBV risks in Afgoye mirror broader patterns found across Southwest State, where poverty, displacement, and limited formal protection systems heighten the vulnerability of women and girls. Women face elevated risks during water collection, market travel, and interactions with unfamiliar laborers. Female farmers also report restricted participation in decision-making processes, especially regarding water allocation and agricultural inputs.

While community awareness of GBV has increased, access to survivor-centered services remains limited, and many cases go unreported. Rehabilitation works requiring external or concentrated local workers around the Ali Daahir canal may increase concerns about sexual harassment or exploitation, making GBV-sensitive mitigation and worker Codes of Conduct critical.

3.2.5. Access to Water and Electricity

Access to safe drinking water varies across the district. Communities depend on shallow wells, boreholes, and river-adjacent extraction points, many of which are seasonal or of poor quality. Irrigation remains the primary water use, yet canal blockages and structural failures restrict reliable supply for many farms, including those served by the Ali Daahir Primary Canal.

Electricity access is limited outside Afgoye town, relying mainly on private small-scale generators or solar systems. In rural areas such as Mareerey, intermittent energy availability restricts water pumping, storage, and productivity during dry seasons.

3.2.6. Waste Management

Afgoye lacks a formal waste management system. Households dispose of waste through open dumping, burning, or burying, which contribute to soil degradation and localized pollution. Agricultural waste, plastic containers, and debris carried by seasonal runoff often end up in canal systems, exacerbating siltation and restricting flow.

Rehabilitation activities linked to the Ali Daahir Primary Canal must therefore include a structured plan for handling excavated materials, vegetation, and solid waste to prevent obstruction, erosion, and contamination.

3.2.7. Cultural Heritage

Afgoye's cultural landscape includes religious sites, sacred trees, communal meeting spaces, and traditional gathering points. While no formally registered heritage sites lie within most canal corridors, communities assign cultural value to certain trees, graves, and social spaces.

Projects along the Ali Daahir canal must avoid disturbing such areas and apply Chance-Find Procedures whenever unexpected cultural materials are encountered during excavation. Local elders are typically the focal points for verifying cultural significance and identifying areas requiring protection.

3.2.8. Security

Security in Afgoye, including Mareerey, is relatively stable compared to past years, yet risks persist due to ongoing regional conflict dynamics, sporadic criminal activity, and population movements. Public movement along rural roads may be affected by checkpoints or local tensions.

Rehabilitation activities involving heavy machinery and equipment transport along the Ali Daahir canal must coordinate with district authorities to avoid security disruptions. Compliance with the Security Management Plan (SMP/SRA) is essential, particularly when mobilizing workers, transporting materials, or working in areas bordering agricultural fields and settlements.

4. Legal and regulatory framework

The rehabilitation of the Ali Daahir Primary Canal will be implemented in accordance with the national laws of the Federal Government of Somalia, the Southwest State regulatory requirements, and the Environmental and Social Framework (ESF) of the World Bank. This chapter summarizes the key Somali constitutional provisions, relevant environmental and sectoral legislation, state-level responsibilities, and applicable international standards. It also integrates Good International Industry Practice (GIIP), including the World Bank Group Environmental, Health and Safety Guidelines (EHSGs), which guide the project in the absence of fully established technical standards in Somalia.

Somalia's Provisional Constitution provides the overarching legal basis for environmental protection, social inclusion, non-discrimination, land management, labor rights, institutional accountability, and access to information. Articles 10 and 11 establish the principles of human dignity and equality, prohibiting discrimination based on gender, clan, economic status, disability, or political opinion, while Article 32 ensures the right of access to information for all citizens. The Constitution also embeds social and economic rights; Article 27 (1 & 5) mandates access to clean water and calls for the protection of vulnerable groups such as women, the elderly, and minorities.

Land governance provisions under Article 43 affirm land as a national resource that must be managed equitably, efficiently, and sustainably. The State is responsible for regulating land use and preventing unauthorized allocations. Articles 111J and 111H establish oversight bodies such as the Office of the Ombudsman and the National Security Commission, which provide accountability mechanisms and redress pathways for grievances related to public administration and security services. Article 45 emphasizes environmental protection, requiring the State and its citizens to conserve natural resources, reverse environmental degradation, and respond to hazardous waste or deforestation.

In alignment with the Constitution, the Environmental Protection and Management Act (EPMA 2024) serves as the primary national legislation governing environmental safeguards. The Act defines mandatory environmental assessments for projects that may have adverse environmental or social impacts, establishes permitting requirements under the Ministry of Environment and Climate Change (MoECC), and sets standards for waste management, pollution control, biodiversity protection, and the application of the precautionary and polluter-pays principles. The companion Environmental and Social Impact Assessment (ESIA) Regulations 2024 operationalize the EPMA by outlining procedures for screening, scoping, categorization, public consultation, disclosure, and permitting of projects. The Ali Daahir Primary Canal rehabilitation must undergo environmental review and obtain clearance through this regulatory framework.

Additional national legislation relevant to the subproject includes the Labor Code of Somalia (2024), which provides rules for occupational health and safety, prohibits child labor, and outlines grievance access for workers; the National Health Professionals Council Act; the Construction Permits Act (2022); and national gender-related policies that mandate the prevention of harmful traditional practices and the provision of support for GBV/SEA/SH survivors. Emerging sectoral frameworks—such as the Draft National Water Act, Draft Ozone Protection Regulations, Draft Forest Management Policy, and Draft Charcoal Policy—also guide the project's environmental footprint and water resource management.

At the Southwest State level, the State Environmental Authority is responsible for applying the federal EPMA and ESIA Regulations within the state's jurisdiction. This includes screening and classification of the subproject, state-level environmental permitting, site inspections, and

compliance monitoring throughout rehabilitation. The Southwest State Ministry of Agriculture and Irrigation (MoAI) oversees technical approvals for irrigation rehabilitation, coordinates with Water Users Associations (WUAs), and ensures compliance with agricultural land-use guidelines. The environmental permit for the Ali Daahir Primary Canal will therefore be jointly processed by MoECC and the Southwest State Environmental Authority, with the designated SWS Environmental Specialist supporting the review and clearance process.

The institutional responsibilities of development partners, particularly FAO under the S-FSRP, include ensuring compliance with World Bank ESF requirements, validating ESMP implementation, monitoring adherence to labor and environmental provisions, and operating the grievance redress channels, including hotline numbers 570 – NPCU, 540 – MoAI Southwest, and 327 – FAO Somalia. The contractor is obligated to prepare and implement a Contractor ESMP (C-ESMP), assign environmental and social focal points, maintain incident and grievance records, and enforce occupational health and safety measures consistent with national laws and international standards. All contractor actions must align with the management measures set forth in this ESMP and with S-FSRP safeguard instruments including the ESMF, RPF, LMP, SEP, WMP, IPMP, and GM procedures.

As the project is financed by the World Bank, it is subject to the Environmental and Social Framework (ESF). The relevant standards include:

- ESS1 on risk assessment and management
- ESS2 on labor and working conditions
- ESS3 on resource efficiency and pollution prevention
- ESS4 on community health and safety
- ESS5 on land acquisition and resettlement (when triggered)
- ESS6 on biodiversity
- ESS8 on cultural heritage
- ESS10 on stakeholder engagement and disclosure

The ESMP also applies the World Bank Group General Environmental, Health and Safety (EHS) Guidelines, which represent Good International Industry Practice. In circumstances where Somali laws and World Bank requirements differ, the more stringent World Bank standards apply to ensure high levels of environmental protection, social inclusion, and occupational safety.

This consolidated legal and regulatory framework provides the foundation for planning, permitting, implementing, and monitoring the Ali Daahir Primary Canal rehabilitation. It ensures that all project activities are carried out in line with national law, state-level procedures, World Bank ESF standards, internationally recognized EHS principles, and GIIP throughout the project lifecycle.

5. Environmental and social risks/impacts

This section presents an assessment of the potential environmental and social impacts associated with rehabilitation works on the Ali Daahir Primary Canal. The assessment evaluates both positive and negative impacts, considering the nature, extent, duration, reversibility, and significance of potential changes arising from project activities. The analysis is based on field assessments, stakeholder consultations, engineering scope, and applicable legal and safeguard standards.

5.1. Methodology

The impact assessment follows the requirements of:

- World Bank Environmental and Social Framework (ESF)
- FAO Environmental and Social Standards
- Environmental Protection and Management Act (EPMA 2024)
- Somalia ESIA Regulations 2024

The assessment applies a structured approach that includes:

- Identification of project activities
- Screening for potential environmental and social interactions
- Categorization of impacts into positive or adverse
- Evaluation of impact significance (low, moderate, high)
- Consideration of direct, indirect, and cumulative effects
- Determination of mitigation requirements

Impacts are assessed for both the rehabilitation phase and the post-rehabilitation operational phase.

5.2. Positive Impacts

The project is expected to generate several significant positive impacts that will enhance irrigation performance, agricultural productivity, and community livelihoods.

5.2.1. Improved Water Distribution and Flow Efficiency

Rehabilitation will remove accumulated silt, restore canal geometry, and clear all division boxes and culverts. These works will significantly improve water conveyance efficiency along the entire 1.0 km Ali Daahir canal corridor, ensuring more reliable and equitable distribution of irrigation water, particularly for midstream and tail-end users.

The Ali Daahir Primary Canal currently directly supports 25 farming households, representing an estimated community population of approximately 150 people (based on an average household size of 6). Restoring the canal's full hydraulic capacity will therefore enhance irrigation security, improve agricultural productivity, and strengthen the livelihoods of all beneficiary households within the command area.

Significance: High (Positive)

5.2.2. Restoration of Irrigated Area and Agricultural Productivity

Rehabilitation of the Ali Daahir Primary Canal is expected to restore the system's original irrigation capacity by reversing the long-term decline from 35 hectares (before deterioration) to the current 23.6 hectares. By re-establishing flow continuity through desilting, reshaping, and reconstruction of auxiliary structures, the project will significantly improve water conveyance efficiency from the head to the tail end of the canal.

Restored and reliable water availability will enable farmers to fully utilize the entire command area, support multiple planting cycles, and reduce dependence on emergency water sources. With adequate and predictable irrigation supply, farming households will be able to diversify into

higher-value crops, increase yields, and strengthen overall agricultural resilience within the Mareerey–Afgoye farming zone.

Significance: High (Positive)

5.2.3. Strengthening of Livelihoods

Restoring irrigation through the rehabilitation of the Ali Daahir Primary Canal will directly improve agricultural productivity for the 25 current beneficiary farmers, compared with a historical user base of around 40 farmers prior to canal degradation. With reliable water delivery, households will be able to increase crop yields, stabilize seasonal production, and reduce dependence on costly or unreliable emergency water sources such as shallow wells or temporary pumping.

The improved flow conditions will enhance farming efficiency across the command area and strengthen livelihoods for both smallholder and medium-scale producers. Women farmers, who often manage water collection and field preparation, will particularly benefit from reduced labor burdens, more predictable irrigation schedules, and improved access to tail-end water supply. These gains collectively support stronger household income, food security, and climate resilience.

Significance: Moderate–High (Positive)

5.2.4. Reduced Water Losses and Maintenance Burden

Excavation of accumulated silt and the removal of physical obstructions along the canal will significantly reduce seepage losses, eliminate recurrent blockages, and minimize overtopping during peak flows. By restoring the canal prism and improving hydraulic continuity, water will move more efficiently from the head to the tail end, reducing the need for farmers to manually open pathways, remove debris, or divert water using labor-intensive methods.

This reduction in manual maintenance will save time and effort for farming households while improving overall irrigation reliability and operational efficiency.

Significance: Moderate (Positive)

5.2.5. Strengthened Local Water Governance

Rehabilitation of the Ali Daahir Primary Canal will help re-establish predictable and equitable water allocation throughout the command area. By restoring the hydraulic functionality of the canal and its auxiliary structures, the system will enable more consistent flow management from the head to the tail end.

This improvement will strengthen coordination among farmers who depend on scheduled irrigation turns, and it will enhance the operational role of Water Users Associations (WUAs) and local canal committees in supervising water distribution, resolving allocation disputes, and enforcing agreed irrigation rules. A more reliable and transparent allocation system will reduce conflict, improve planning for cropping cycles, and support collaborative water governance across the farming community.

Significance: Moderate (Positive)

5.3. Environmental Impacts at Rehabilitation Phase

The rehabilitation phase of the project is expected to generate environmental impacts, which require appropriate mitigation measures.

5.3.1. Soil Disturbance, Excavation, and Erosion

Earthworks associated with canal desilting, reshaping, and excavation may generate several short-term environmental disturbances within and around the Ali Daahir canal corridor. Localized

erosion of canal embankments can occur where soils are exposed or destabilized during excavation and clearing activities. Soil displacement and loosening are expected as the canal prism is opened and reshaped, particularly in sections where the banks are already weakened by prior siltation or vegetation removal.

These activities may also temporarily disturb adjacent farmland located close to the canal alignment, especially where machinery movement or spoil handling occurs near cultivated areas. During rainfall or improper spoil placement, fine sediments may be mobilized and enter nearby drainage paths, leading to increased sediment loads and short-lived turbidity.

Magnitude: Localized

Duration: Short-term

Significance: Moderate (Mitigation Required)

5.3.2. Waste Generation

Excavation of the canal prism and construction of auxiliary hydraulic structures will generate substantial volumes of soil, vegetation, silt, and mixed debris. If not properly managed, these materials can obstruct public pathways, create wind-blown nuisance, and contribute to runoff contamination that affects adjacent farms, homesteads, and downstream water bodies.

To mitigate these risks, all excavated material will be handled under a controlled waste management protocol that aligns with the environmental requirements of the EPMA 2024, the ESIA Regulations 2024, and the World Bank's ESS3 on Resource Efficiency and Pollution Prevention.

The contractor will:

- Segregate the various waste streams at source.
- Stockpile clean excavated soil suitable for reuse at designated locations for later reinstatement, backfilling, or stabilization of embankments.
- Transport unsuitable or contaminated material to approved disposal areas identified in consultation with the Afgoye District Administration and the Southwest State Environmental Authority.
- Collect vegetation cleared from the canal corridor immediately after cutting to prevent drying and wind dispersal; such vegetation will either be composted, mulched for agricultural use, or disposed of at designated municipal sites where open dumping is prohibited.
- Collect mixed debris (plastic, metals, packaging, non-organic waste) daily and transfer it to licensed waste handling points in accordance with local waste bylaws.
- Truck movements and hauling activities will be managed to prevent spillage along access roads, and all loads will be covered during transport to minimize dust and scatter. Temporary stockpiles will be located away from watercourses, residential areas, and active farmland to avoid runoff contamination during rainfall events. Appropriate drainage controls, including silt fences and perimeter bunds, will be installed to prevent sediment from entering irrigation channels or natural waterways.
- Continuous monitoring by the contractor, FAO safeguards team, and the Southwest State Environmental Specialist will ensure that disposal practices remain compliant, and any nonconforming waste handling will be corrected immediately.

5.3.3. Water Quality Risks

Rehabilitation activities—particularly excavation, desilting, and movement of loose soil—may temporarily increase water turbidity if eroded sediments or construction materials are washed into nearby natural drainage channels or toward the Shabelle River during rainfall events.

Disturbed soil, fine particles, and dislodged vegetation can be mobilized by surface runoff, leading to short-term discoloration of water and reduced clarity.

While these effects are localized and reversible, they may momentarily affect downstream users, small aquatic habitats, or livestock watering points. Given the limited scale of works and the distance between the canal and the river, such turbidity increases are not expected to cause significant environmental harm and can be effectively managed through good construction practices, proper spoil placement, and runoff control measures.

Significance: Low–Moderate

5.3.4. Air Quality Impacts (Dust and Emissions)

Construction activities, including excavation and the operation of machinery, may generate dust and localized emissions, particularly during dry periods. These impacts can affect nearby farmers, residents living along the canal edges, and livestock in the area. Although the effects are generally short-term and localized, they may cause minor respiratory irritation or nuisance dust deposition.

The overall significance of air quality impacts is considered Low–Moderate, and standard dust mitigation measures, such as water spraying on exposed surfaces, should be implemented.

5.3.5. Noise and Vibration

Operation of construction machinery and excavation equipment may generate noise and vibrations, potentially disturbing nearby households and livestock in Mareerey. The effects are expected to be temporary and localized to active work areas, with the greatest impact occurring during peak construction periods. With adherence to standard mitigation measures, such as limiting work hours near sensitive receptors, the significance of noise and vibration impacts is assessed as Low (Short-term).

5.3.6. Occupational Health and Safety Hazards

Workers on the canal rehabilitation project are exposed to various occupational health and safety hazards, including injuries from excavation, machinery-related accidents, heat stress, slips or falls on unstable canal banks, and lack of proper personal protective equipment (PPE). Without proper mitigation, these hazards could result in moderate impacts.

Implementation of a comprehensive health and safety plan, including mandatory use of PPE, training on safe equipment operation, provision of shaded rest areas, and clear site safety protocols, is required to reduce risks to workers. With these measures in place, occupational health and safety risks remain Moderate but manageable.

5.3.7. Trench Stability and Excavation Safety Risks

Excavation activities for desilting and embankment rehabilitation expose workers to trench collapse hazards due to loose alluvial soils common within the Afgoye floodplain. Soil instability may result from saturation, vibration from heavy machinery, or improper excavation angles.

The contractor shall implement excavation safety protocols including stable slope angles, benching or battering where necessary, prohibition of entry into unsupported trenches deeper than 1.2 meters, safe spoil placement away from trench edges, provision of safe access and egress, and daily inspections by a competent supervisor. Toolbox talks shall address trench hazards prior to commencement of excavation works.

With appropriate controls, residual risk is Moderate and manageable.

5.3.8. Community Health and Safety Risks

Accidental injuries and safety risks are a significant concern during canal excavation and construction of auxiliary structures, particularly in rural agricultural settings such as Mareerey, where communities, livestock, and farming activities coexist around the work zone.

Open excavations, active machinery, and increased vehicle movement create multiple exposure pathways that require structured control measures consistent with World Bank ESS4 on Community Health and Safety and the Occupational Health and Safety provisions of the Somali Labour Code.

Key measures include:

- Installation of physical barriers, warning tapes, and signage in Somali with clear pictograms around open trenches and excavation areas.
- Controlled access routes around the work zone and daily inspection of protective measures.
- A dedicated traffic management plan to guide safe vehicle operations, enforce speed limits, designate turning/loading zones, and deploy trained flaggers at high-risk crossing points.
- Mandatory safety briefings for vehicle operators and routine mechanical checks on equipment.
- Coordination with community leaders and WUAs to identify peak grazing times and adjust work schedules or install temporary fencing to reduce livestock–machinery interactions.
- Securing all working areas through controlled entry points, site guards, and visible demarcation to prevent unauthorized public access.
- Community awareness sessions with farmers, women’s groups, and youth representatives to reinforce safety messages.

Collectively, these measures create a structured and enforceable safety framework designed to reduce community exposure, improve situational awareness, and ensure safe coexistence between construction activities and local livelihoods throughout the project lifecycle.

5.3.9. Interaction with SMP/SRA Requirements

The Ali Daahir Primary Canal runs through the agricultural belt of Afgoye District, where small farms, scattered farming settlements, and flat alluvial plains are all connected to the Shabelle River corridor. During the rehabilitation work, workers and construction equipment will need to move along the canal to reach different work sites. This means that the contractor will need to work closely with local authorities.

The contractor must follow the Project’s Security Management Plan (SMP) and Security Risk Assessment (SRA) to the letter in order to handle these movements safely and responsibly. Authorities at both the district and village levels must be notified in advance, approved access routes must be followed, a security focal point must be appointed, and site-level controls must be put in place, such as limiting access, tracking personnel, and securely storing materials. Any security personnel hired must follow SMP rules and be trained to work in the local context.

Contractual terms, regular supervision, and rapid reporting of security-related incidents will all help ensure that the SMP/SRA is followed. The contractor must let community members and local leaders know ahead of time about planned movements and work schedules to avoid any possible security problems. Clear communication with both the authorities and the community, as well as strict adherence to SMP/SRA measures, will keep agricultural activities running smoothly and keep security risks under control, supporting the Moderate significance rating.

5.4. Social Impacts at Rehabilitation Phase

The rehabilitation phase of the Ali Daahir Primary Canal may lead to temporary social impacts, including disruptions to farming activities, labor influx risks, limited access to grievance mechanisms, and potential exclusion of vulnerable groups, all of which require proactive mitigation and community engagement.

5.4.1. Temporary Access Restrictions and Livelihood Disruption Risks

Rehabilitation of the Ali Daahir Primary Canal may temporarily restrict access to irrigation outlets, farm crossings, livestock routes, or footpaths during active construction. These disruptions are short-term and reversible but may affect irrigation scheduling if not properly coordinated.

Mitigation measures include phased construction scheduling, advance notification to affected farmers through the Water User Committee (WUC), provision of temporary diversion channels where feasible, establishment of temporary crossing points, and prompt restoration of access upon completion of works in each canal segment.

As works are confined within the existing canal alignment, no permanent land acquisition or displacement is anticipated.

5.4.2. Temporary Disturbance to Farming Activities

The rehabilitation of the Ali Daahir Primary Canal may result in temporary disruptions to routine farming activities along the canal corridor. These disruptions could include restricted access to individual plots, changes to irrigation schedules, and temporary limitations on the movement of farm equipment.

During stakeholder consultations in similar Afgoye contexts, local farmers indicated that such interruptions are generally acceptable if they are given adequate advance notice. To mitigate potential impacts, the contractor is required to coordinate closely with farmers and community leaders in Mareerey to provide timely information on planned works, including the expected duration and location of activities. Additional measures should include:

- Scheduling rehabilitation to avoid critical irrigation periods, such as the main **Deyr and Gu seasons**
- Providing alternative access routes to farms when sections of the canal are under rehabilitation
- Minimizing any interference with water delivery to the extent feasible

5.4.3. Labor Influx Risks

The rehabilitation of the Ali Daahir Primary Canal will require a temporary workforce drawn primarily from the villages and settlements within the canal's coverage area. No significant external or non-local labor is anticipated, as selection of the workforce will prioritize local community members.

Even with a locally sourced workforce, the temporary increase in the number of workers at the project site may create minor social risks, such as misunderstandings with community members or gender-related vulnerabilities. To manage these risks, the contractor will:

- Enforce a worker Code of Conduct
- Provide mandatory training on GBV and SEA/SH prevention
- Ensure continued awareness of behavioral and ethical standard

The project will prioritize hiring from villages directly served by the canal, and community leaders will be informed of worker activities, schedules, and site movements. An Environmental and Social

Officer will oversee daily worker-community interactions, monitor compliance with behavioral standards, ensure timely reporting of incidents, and implement corrective action when required. With these measures, labor influx risks remain low and fully manageable.

5.4.4. GM Access Limitations

Farmers and canal users have emphasized that clear and consistent communication regarding the Grievance Mechanism (GM) is essential for ensuring meaningful access to complaint-handling channels throughout the rehabilitation period. Although the project GM is already established under S-FSRP, limited public awareness may hinder timely reporting of concerns related to rehabilitation activities, water distribution disruptions, labor behavior, or safety risks.

Many community members are not yet familiar with the hotline numbers (570 – NPCU, 540 – MoAI Southwest, 327 – FAO Somalia), reporting procedures, or the types of grievances that can be submitted.

To address these challenges, the project will implement targeted measures to strengthen GM accessibility and ensure that all farmers—including women, youth, elderly persons, and vulnerable groups—understand how to use the system. Before contractor mobilization, the FAO/S-FSRP safeguards team will conduct community information sessions to explain:

- The purpose of the GM
- Available reporting channels
- Expected response times
- Confidentiality protections

The GM hotline numbers will be widely publicized through verbal announcements, posters displayed in community centers, mosques, market areas, and via local leaders and WUAs. Printed materials will be distributed in the local language, with simple messaging to ensure accessibility for all literacy levels.

During rehabilitation, the contractor’s Environmental and Social Officer will ensure that grievance information at the site level is clearly visible and regularly updated. Farmers will be encouraged to raise concerns early, either through the hotline, written submissions, or communication with FAO field monitors. All grievances will be logged, acknowledged within 48 hours, and processed according to the project’s established procedures.

With these measures—proactive communication, community outreach, visible signage, and dedicated oversight—the limitations in GM access are expected to be effectively mitigated. The residual risk is therefore assessed as Low–Moderate, with mitigation required to maintain consistent accessibility and community confidence in the reporting system.

5.4.5. Vulnerable Group Exclusion Risks

The project area includes groups that may be disproportionately affected by limited access to project information, consultations, or grievance channels during the rehabilitation phase. Women, land-poor farmers, elderly persons, and other vulnerable households often face barriers such as restricted mobility, lower participation in community meetings, and limited influence in local decision-making structures.

These constraints may reduce their ability to articulate concerns related to water distribution, temporary disruptions to farming activities, or safety risks associated with rehabilitation works on the Ali Daahir canal. If not proactively addressed, these gaps in engagement may lead to unequal access to project benefits, miscommunication regarding rehabilitation schedules, or reduced confidence in the grievance and feedback system.

To mitigate this, the project must ensure inclusive communication approaches, such as:

- Targeted outreach to vulnerable groups
- Small-group discussions and focus groups
- Involvement of women representatives
- Use of accessible communication channels (including verbal and visual communication)

Collaboration with Water Users Associations and village committees will also be critical to ensure that vulnerable groups are systematically informed and able to participate meaningfully.

Given the manageable nature of these risks and the availability of established mitigation measures within the Stakeholder Engagement Plan (SEP) and the ESMP's GM structure, the significance is assessed as Low–Moderate. Continuous monitoring and tailored engagement will be required to maintain equitable access and ensure that all affected groups remain informed and involved throughout project implementation.

5.5. Operational Phase Impacts

The operational phase of the Ali Daahir Primary Canal is expected to produce long-term impacts on water management, agricultural productivity, and community benefits.

5.5.1. Long-Term Positive Water Distribution Equity

Restoration of the canal's hydraulic capacity will significantly enhance the reliability and fairness of water distribution across the entire command area, with the most substantial benefits accruing to midstream and tail-end farmers who currently experience chronic shortages. By removing accumulated silt, re-establishing a consistent cross-section (approaching the original 0.8 m width and 0.6 m depth), and rehabilitating auxiliary structures, the canal will be able to convey adequate flow volumes even during peak irrigation periods.

This improvement will reduce upstream–downstream disparities, strengthen crop productivity, and support more equitable agricultural outcomes for all farming households served by Ali Daahir. The long-term positive impact on water distribution equity is assessed as High, given its direct contribution to livelihood resilience and food security.

5.5.2. Reduced Flooding and Blockages

Rehabilitation of the culverts and division boxes will restore proper conveyance of both irrigation water and stormwater, thereby reducing recurring blockages, localized flooding, and flow diversion problems currently reported along the canal. Improved structural integrity will mitigate risks of overtopping, embankment erosion, and sediment deposits that damage adjacent farmland.

Restored hydraulic functionality will also enhance drainage efficiency during high-flow events, preventing the formation of stagnant water that contributes to mosquito breeding and public health concerns. Overall, the reduction in flooding, waterlogging, and structural blockages represents a High positive impact with immediate and long-term benefits for agricultural productivity and community safety.

5.5.3. Climate and Flood-Related Construction Risks

Heavy rainfall during Gu and Deyr seasons may increase surface runoff and sediment transport, potentially destabilize partially rehabilitated canal embankments and create unsafe working conditions. Elevated Shabelle River discharge during peak rainfall periods may also increase canal water levels during construction.

Mitigation measures include phased scheduling of excavation outside peak flood periods, installation of temporary drainage controls, immediate compaction of reshaped embankments, weather monitoring, and establishment of emergency evacuation procedures. Residual climate-related risk is considered Moderate and manageable.

5.5.4. Maintenance Requirements

Despite the anticipated improvements from rehabilitation, the long-term performance of the Ali Daahir Primary Canal will depend heavily on sustained routine maintenance. Without regular desilting, vegetation management, inspection of structural components, and community-led upkeep, the canal may gradually return to its current degraded condition. Poor maintenance would reintroduce siltation, flow restrictions, erosion, and reduced irrigation reliability, undermining the investment made under S-FSRP.

To mitigate this risk, a clear operation and maintenance (O&M) plan involving the Ministry of Agriculture and Irrigation, Water Users Associations (WUAs), and community committees should be established. In the absence of such measures, the negative impact of insufficient maintenance is assessed as **Moderate**, with the potential to escalate over time.

5.6. Cumulative Impacts

The rehabilitation of the Ali Daahir Primary Canal forms part of a broader set of irrigation restoration activities being implemented under the Somalia Food Systems Resilience Program (S-FSRP) within Afgoye District. Several nearby canals are undergoing, or are planned for, similar rehabilitation works.

When viewed collectively, these interventions are expected to generate cumulative positive impacts across the wider agricultural landscape. By improving water conveyance efficiency, restoring damaged hydraulic structures, and enhancing irrigation reliability, the combined effect of these projects will contribute to increased agricultural productivity, strengthened food security, and greater climate resilience at the district and regional levels.

The cumulative benefits are further amplified by improvements in farming practices, reduced blockages across the irrigation network, and the reactivation of previously underutilized farmland. Taken together, these parallel canal restorations are anticipated to support more stable cropping cycles and promote equitable water distribution among upstream, midstream, and tail-end users.

No significant negative cumulative impacts are anticipated, provided that mitigation measures outlined in this ESMP are consistently applied across all subprojects. Coordinated planning among implementing partners, proper synchronization of rehabilitation activities, and adherence to environmental and social safeguards are expected to ensure that cumulative risks remain minimal.

5.7. Summary of Impacts

Table 4 - Summary of impacts

Impact Category	Impact Type	Significance Before Mitigation	Residual Significance
Soil disturbance and erosion	Negative	Moderate	Low
Waste generation	Negative	Low–Moderate	Low
Air and dust	Negative	Low–Moderate	Low
Noise	Negative	Low	Low
OHS risks	Negative	Moderate–High	Low–Moderate

Community safety	Negative	Moderate	Low
Water distribution	Positive	High	High
Agricultural productivity	Positive	High	High
Livelihood improvement	Positive	Moderate–High	High
Tail-end fairness	Positive	High	High

Table 5- Summary of the Environmental and Social Risks and Impacts during rehabilitation and operation phases

Risk Category	Key Risks and Impacts	Risk Rating
ESS 1: E&S Assessment and Management	<p>Failure to fully implement or monitor the ESMP could result in unmitigated impacts such as:</p> <ul style="list-style-type: none"> Poor control of excavation works and spoil disposal Uncoordinated water interruptions affecting farmers (currently 25 farmers over ~23.6 ha) Insufficient inclusion of vulnerable groups (women farmers, tail-end users, land-poor households) Weak documentation and reporting by contractors <p>Risk includes inconsistent application of mitigation measures along the 1.0 km Ali Daahir Primary canal corridor in Mareerey village (Afgoye District).</p>	<p>Moderate during rehabilitation</p> <p>Minor during operation</p>
ESS 2: Labor and Working Conditions	<p>Risks associated with canal excavation and reconstruction of existing canal structures along the 1.0 km Ali Daahir Primary canal include:</p> <ul style="list-style-type: none"> OHS hazards: collapsing trench walls, machinery movement (excavators, tippers, compactors), dust inhalation, noise, slips/falls, working near water Potential non-compliance with labor laws (child/forced labor) Labor disputes related to wages, hours, and conditions Worker misconduct including SEA/SH, harassment, or conflict with community members Discrimination in recruitment or task allocation (women, minority groups) Weak or inaccessible worker GM 	<p>Moderate during rehabilitation</p> <p>Minor during operation</p>
ESS 3: Resource Efficiency & Pollution Prevention	<p>Environmental risks specific to Ali Daahir irrigation canal works include:</p> <ul style="list-style-type: none"> Improper handling of excavated spoil leading to runoff, sedimentation, or blocking footpaths Dust emissions from excavation, haulage, and disposal Noise and vibration from machinery Accidental fuel/oil leakage contaminating soils or irrigation water Inefficient water use during rehabilitation (concrete works for structures) Poor storage or disposal of waste materials 	<p>Moderate during rehabilitation</p> <p>Moderate during operation</p>
ESS 4: Community Health and Safety	<p>Risks to nearby communities and farmers (25 current users; previously 40) include:</p> <ul style="list-style-type: none"> Open excavation hazards along the Ali Daahir canal alignment Increased traffic from construction trucks transporting spoil Interaction between machinery and livestock/common pathways Temporary water interruptions affecting tail-end farmers and reduced irrigated area (23.6 ha vs 35 ha previously) Unauthorized access to worksites Spread of communicable diseases SEA/SH risks affecting women and minors Security risks if equipment is not protected or site access is not controlled 	<p>Moderate during rehabilitation</p> <p>Moderate during operation</p>

Risk Category	Key Risks and Impacts	Risk Rating
ESS5: Land Acquisition, Restrictions on land use and Involuntary Resettlement	<p>Although Ali Daahir canal works occur entirely within the established Ali Daahir Primary canal corridor, potential risks include:</p> <ul style="list-style-type: none"> Temporary disturbance of crops close to canal banks Possible damage to small assets (fences, footpaths) Temporary access restrictions for farmers Any displacement impacts—if verified—will be addressed under the RAP budget only (not ESMP). 	Minor during rehabilitation
ESS8: Cultural Heritage	<p>Canal excavation (removal of silt up to 1 m depth) along Ali Daahir Primary canal may expose:</p> <ul style="list-style-type: none"> Buried cultural materials Historical artifacts Graves or heritage items <p>A Chance-Find Procedure is included as an annex.</p>	Moderate during rehabilitation
ESS 10: Stakeholder Engagement	<p>Risks include:</p> <ul style="list-style-type: none"> Exclusion of women farmers, minority groups, and tail-end irrigators from engagement along Ali Daahir canal Low awareness of GM hotlines (570 – NPCU; 540 – MOAI Southwest; 327 – FAO Somalia) Poor documentation of attendance and feedback Complaints unresolved due to lack of follow-up Consultations must continue throughout rehabilitation. 	Moderate during rehabilitation Moderate during operation

6. Environmental and social risks/impacts mitigation plan

This section outlines specific mitigation measures designed to address the environmental and social impacts identified in Section 5. The measures follow the mitigation hierarchy and are consistent with the World Bank ESF, FAO Environmental and Social Standards, and the Environmental Protection and Management Act (EPMA) 2024

The mitigation plan applies to all phases of the project—from pre-construction to construction and operational stages—and assigns responsibilities to implementing institutions, contractors, the supervision team, and community structures.

6.1. Mitigation Matrix

Environmental & social mitigation measures

Table 6 - Environmental and Social Mitigation Measures Tables

Risk / Impact	Mitigation Measure	Responsibility	Timing	Performance Indicator
Lack of environmental compliance	Obtain environmental permit from MoECC + Southwest State Environmental Authority, referencing EPMA 2024 & ESIA Regulations 2024	FAO + Contractor	Before mobilization	Permit issued and filed
Insufficient project information to community	Conduct project briefing with farmers: schedule, access routes, risks, (570- NCPU, 540- MOAI Southwest and 327-FAO Somalia)	FAO Safeguards + MoAI	Pre-rehabilitation	Attendance sheets; photos
Inadequate SMP/SRA compliance	Contractor to adopt and implement Project SMP/SRA (latest version) including worker movement and access control	Contractor	Pre-rehabilitation	SMP/SRA compliance verified
Labor influx risks	Require contractor to hire local labor where feasible; enforce CoC; establish OHS inductions	Contractor	Pre-rehabilitation	Worker records; CoC signed

6B1. Rehabilitation Phase — Environmental Impacts

Risk	Mitigation	Responsibility	Timing	Indicator
Soil erosion from excavation	Stabilize embankments; avoid over-excavation; reshape slopes properly	Contractor	Daily	Slopes stable; no collapse
Sediment entering natural drainage	Store excavated material away from water pathways; cover spoil piles	Contractor	Daily	No sediment runoff observed

Table 6 B.2 Waste Management

Risk	Mitigation	Responsibility	Timing	Indicator
Improper disposal of spoil and vegetation	Identify approved disposal site; transport spoil safely; no dumping on farmland	Contractor	Weekly	Waste logs; disposal site verified
Debris blocking canal flows	Remove vegetation from canal bed and culverts; ensure safe stacking	Contractor	Daily	Canal remains unobstructed

Table 6 B.3 Air Quality and Dust

Risk	Mitigation	Responsibility	Timing	Indicator
Dust emissions	Water sensitive locations; limit speed of machinery along farms	Contractor	Daily	Dust levels acceptable
Machine emissions	Equipment must be in good condition; no idling	Contractor	Weekly	Maintenance logs

Table 6 B.4 Noise

Risk	Mitigation	Responsibility	Timing	Indicator
Noise disturbance	Work only during daylight; provide advance notice to residents	Contractor	Daily	No complaints recorded

C. Rehabilitation Phase — Occupational & Community Health and Safety

Table 6 C.1 Occupational Health and Safety (OHS)

Risk	Mitigation	Responsibility	Timing	Indicator
Injuries during excavation	Provide PPE (helmets, boots, gloves); install barriers on steep edges	Contractor	Daily	PPE compliance rate
Heat stress	Provide drinking water; schedule rest breaks; shade for workers	Contractor	Daily	No heat-related incidents
Machinery hazards	Operators must be certified; enforce exclusion zones	Contractor	Daily	Incident reports

Table 6 C.2 Community Health and Safety (CHS)

Risk	Mitigation	Responsibility	Timing	Indicator
------	------------	----------------	--------	-----------

Public access to rehabilitation areas	Install signage; workers supervise excavation zones	Contractor	Daily	No community injuries
Traffic risks	Use designated routes; coordinate with local leaders	Contractor	Daily	Traffic log maintained
Livestock accidents	Farmers notified prior to works; temporary barriers installed	Contractor	Daily	No livestock incidents

D. Rehabilitation Phase — Social Impacts

Table 6 D.1 Disruption to Farming Activities

Risk	Mitigation	Responsibility	Timing	Indicator
Restricted field access	Provide schedule notices; keep crossings accessible	Contractor + FAO	Weekly	Farmer complaints minimized

Table 6 D.2 Vulnerable Groups Inclusion

Risk	Mitigation	Responsibility	Timing	Indicator
Exclusion of women or land-poor farmers	Ensure gender-inclusive meetings; provide simplified GM access	FAO + MoAI	Monthly	Participation list

Table 6 D.3 GM Access

Risk	Mitigation	Responsibility	Timing	Indicator
Lack of awareness of complaint channels	Publicize hotlines (570-NPCU and 540 -MOAI Southwest, 327- FAO Somalia); display GM posters; include in meetings	FAO Safeguards/ SWS Safeguard	Monthly	Increase in GM usage/awareness

E. Operational Phase Impacts

Table 6 E.1 Water Distribution Efficiency

Risk	Mitigation	Responsibility	Timing	Indicator
Inequitable water distribution	Maintain cleaned division boxes; enforce rotation schedule	WUA + Farmers	Seasonal	Improved tail-end delivery

Table 6 E.2 Long-Term Canal Maintenance

Risk	Mitigation	Responsibility	Timing	Indicator
Siltation reoccurrence	Annual desilting program; community-organized cleaning	MoAI + WUA	Annual	No blockages reported

Table 6 E.3 Flooding at Culverts

Risk	Mitigation	Responsibility	Timing	Indicator
Blocked culverts	Routine debris removal; monitor dry-season flow	WUA + Farmers	Monthly	Culverts free-flowing

Table 7 - Roles and Responsibilities

Actor	Responsibility
FAO (Implementing Agency)	Oversight, safeguards supervision, reporting to the World Bank
Contractor	Implement all mitigation measures, maintain logs, OHS enforcement
Supervision Engineer	Daily oversight, E&S compliance monitoring
MoECC + Southwest Environmental Authority	Environmental permitting, inspections
MoAI (Southwest State)	Coordination, community liaison, maintenance planning
Water User Association	Post- rehabilitation maintenance, community monitoring
Community Leaders	Information dissemination, grievance facilitation

Table 8 - Environmental & Social Mitigation Plan for Ali Daahir Primary Canal Subproject

Risks / Impacts	Mitigation Measures	Methods / Tools / Resources	Responsibility	Project Phase	Timeline / Frequency	Mitigation Budget
ESS1 – Assessment and Management of Environmental and Social Risks and Impacts						
A. Environmental Risks: Soil erosion & embankment instability during excavation; Hydrological disruptions (turbidity, backflow, sedimentation) ; Temporary interruption of irrigation flow; Cumulative impacts from seasonal river changes. B. Social Risks: Water-use conflicts among	A. Environmental: Fully implement ESMP & C-ESMP; Stabilize canal banks & excavated areas immediately; Schedule works outside peak river periods/rains.; Provide temporary water diversion to maintain irrigation; Daily inspection of embankment and erosion-sensitive areas B. Social: Conduct conflict	ESMP & C-ESMP Sediment/flow control tools FAO inspection checklists Conflict mapping tools; GM logs & communication sheets	Contractor (primary) FAO Supervising Engineer NPCU – MoAI (oversight) Southwest State PIU (coordination)	Construction	Daily inspection (Contractor); Weekly supervision (FAO SE) Continuous during critical works	Included in contract price; Included in FAO supervision & management budget

farmers; C. Administrative Risks: Weak ESMP/C- ESMP implementatio n; Poor coordination between Contractor, FAO, NPCU & PIU; Inadequate monitoring & delayed reporting.	mapping prior to works; Transparent targeting of vulnerable/marg inalized groups; Maintain daily communication with WUCs; Use GM to record/resolve grievances; Coordinate water distribution schedules. C. Administrative: Weekly FAO supervision + non-compliance notices; Contractor keeps daily logs & ESMP checklists; Monthly E&S refresher training for workers; Strengthen C- ESMP using FAO TA tools/templates.					
ESS2 – Labor and Working Conditions						
A. Labor Risks: Risk of child labor or forced labor; Unfair recruitment practices and exclusion of women, youth, and vulnerable groups; Delayed payment of wages leading to disputes; Lack of written contracts and unclear employment terms. B. Occupational Health & Safety (OHS) Risks: Injuries from machinery, open excavations, unstable banks;	A. Labor Standards: Implement the project’s LMP in full; Verify worker ages (18+ only); Establish and publicize a confidential worker GM; Promote inclusion of women, youth and minority groups; Communicate payment schedules clearly to avoid disputes. B. Occupational Health & Safety: Provide full PPE (helmets, gloves, boots, reflective vests, ear protection);	Labor Manageme nt Procedures (LMP); Code of Conduct (CoC); Worker GM tools; PPE sets; OHS toolbox talk templates; Accident/in cident logs; Payment monitoring tools; Safety Risk Assessment forms; Training attendance registers	Contractor (primary implementer); FAO Technical Assistance team (training, oversight); FAO Supervising Engineer (verification) NPCU – MoAI (labor compliance oversight); Southwest State PIU (worker engagement/s upport)	Construc tion & Operatio n	Daily OHS toolbox talks; Weekly OHS inspectio ns by contract or; Weekly FAO supervisi on Monthly labor audits	Included in contract price Support ed under FAO supervisi on budget; Included in MoAI operatio nal costs

<p>Exposure to excessive noise and vibration; Heat stress, dehydration, and unsafe working hours; Lack of PPE and inconsistent use; Poor site layout and unsafe access paths.</p> <p>C. Administrative and Compliance Risks: Poor implementation of Labor Management Procedures (LMP); No worker GM or weak confidential reporting system; Lack of OHS incident reporting, RCAs, and training; Labor standards not aligned with national laws or EHSGs; Inadequate record-keeping (hours worked, incidents, contracts).</p>	<p>Conduct daily toolbox talks and weekly OHS sessions; Provide clean drinking water, shaded rest areas, and sanitation facilities; Implement heat-stress management (adjust shifts, rest breaks); Train machinery operators and enforce licensing requirements; Conduct Safety Risk Assessments and update site layout; Keep accident and near-miss logs and conduct Root Cause Analysis (RCA);</p> <p>C. Administrative Measures: Monthly refresher training for all workers; Maintain up-to-date labor registers, GM records, OHS logs; Enforce Code of Conduct (CoC) for all workers with clear penalties; Continuous supervision by FAO to ensure compliance.</p>					
<p>ESS3 – Resource Efficiency and Pollution Prevention</p>						
<p>Pollution Risks: Dust emissions from excavation, vehicle movement, dry soils; Noise and vibration from machinery and</p>	<p>Pollution Control: Use water sprinklers to suppress dust on required access roads and work sites; Maintain vehicles and</p>	<p>Waste Management Plan (WMP); Water truck / sprinklers; Fuel/oil bunds; Spill kits; Water</p>	<p>Contractor (primary implementer) FAO Supervising Engineer (verification); NPCU – MoAI (oversight); Southwest</p>	<p>Construction & early operation</p>	<p>Daily pollution checks; Weekly waste & fuel inspections; Monthly reporting</p>	<p>Included in contract price; Included in FAO supervision budget</p>

<p>equipment (minor since the subproject site locates a ruler agropastoral setting; Air emissions (smoke, diesel fumes) from poorly maintained machinery (negligible); Fuel and oil spills contaminating soil and water sources; Increased turbidity in irrigation canals and drainage channels</p> <p>B. Waste Management Risks: Accumulation of construction debris and vegetation waste; Lack of proper waste segregation (hazardous vs non-hazardous); Disposal of waste in unauthorized locations; Community exposure to unsafe waste piles;</p> <p>C. Water & Soil Quality Risks: Erosion and sedimentation entering river/canal systems (low); High Total Dissolved Solids (TDS) water used for irrigation causing soil salinization; Increased Total Suspended</p>	<p>machinery regularly (oil change, tuning, filter replacement); Limit noisy activities to daytime hours and notify nearby households; Store fuel/oil in banded, labeled containers away from waterways; Keep spill kits on site and train workers on their use; Waste Management: Implement Waste Management Plan (WMP); Clearly label waste bins: general waste, hazardous waste, organic waste; Identify authorized disposal sites in collaboration with WUC & State MoAI; Remove debris regularly and ensure safe transport to disposal sites; Prohibit burning of waste;</p> <p>C. Water & Soil Quality Safeguards: Minimize vegetation disturbance to avoid exposed soils. Install erosion control measures (brush barriers, silt fences were required); Conduct TDS/TSS analysis before allowing irrigation water</p>	<p>testing kits (TDS, TSS); Training materials</p>	<p>State PIU (coordination & local enforcement)</p>		<p>by contract or; Continuous monitoring during excavation & earthworks</p>	
--	---	--	---	--	---	--

Solids (TSS) in canal water; Contamination of shallow water sources;	use; Avoid using water with TDS > 1,500 ppm for irrigation; Monitor turbidity during excavation near water inlets.					
ESS4 – Community Health, Safety, and Security						
A. Community Health & Safety Risks: Exposure to construction hazards (machinery, trucks, excavations); Unsafe access around open trenches, axillary structures (crossing culverts, division boxes & intake reconcentration/rehab specified sites) and unstable canal banks; Child safety risks when children walk near the site or along farm paths; B. Security Risks: Misconduct, intimidation, or abuse by security personnel; Tension or conflict between hired guards and communities; Excessive or disproportionate security practices. C. Fragility, Conflict & Social Tension Risks: Harmful inward migration driven by perceived	A. Community Health & Safety Measures: Install robust fencing, barriers, and warning signage around all hazardous zones; Restrict unauthorized entry into the construction area except for workers; Conduct community awareness sessions on construction risks, especially targeting women, youth, and farmers; Provide safe and clearly marked temporary access routes including footpaths, vehicle bypasses, and pedestrian crossings around all work areas involving culverts, intakes, sluice gates, division boxes, and excavated sections of the canal; Remove debris regularly following EHSG guidelines; B. Security Management Measures: Implement and monitor the	Security Management Plan (SMP); Traffic Management Plan (TMP); Fencing, barriers & signage; Debris removal procedures; EHSG safety guidelines; GM system (including security channel); Training materials (security, GBV, community safety); Community awareness materials	Contractor (primary implementer); FAO Supervising Engineer (verification & compliance enforcement); FAO Technical Assistance (training & oversight); Southwest State PIU (community coordination); WUC (local communication)	Construction	Daily safety checks (Contractor); Weekly FAO supervision; Monthly security reviews; Continuous community sensitization	Included in contract price; Included in project management & FAO supervision budget

<p>project benefits; Community dynamics disrupted by labor influx; Clashes or friction between villages over canal access, water distribution, or workforce selection;</p> <p>D. Traffic and Road Safety Risks: Increased traffic from machinery, trucks, and service vehicles; Accidents involving children, livestock, or farmers using the same paths; Unsafe turning points, blind spots, and unregulated movement of heavy equipment.</p>	<p>Security Management Plan (SMP); Hire the security guards from the local community & train human rights, respectful engagement, and proportional use of force to avoid conflicts; Require guards to sign and comply with a Security Code of Conduct;</p> <p>C. Fragility & Social Risk Mitigation: Base targeting decisions on FINA findings and transparent vulnerability criteria; Conduct consultations with local authorities, village elders and WUCs/Canal Committee to reduce tension; Track population influx risks and adjust site management plans accordingly; Provide clear communication on project benefits and eligibility.</p> <p>D. Traffic and Road Safety Controls: Develop and implement a Traffic Management Plan (TMP); Enforce strict speed limits around work zones; Install traffic warning signs at</p>					
--	---	--	--	--	--	--

	key points used by pedestrians, trucks and livestock; Train vehicle operators and road workers on safety risks; Maintain access routes clear and safe for community use.					
ESS5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement						
ESS5 is not triggered. The canal lies fully within existing public land owned by the Government, as confirmed in Annex 2 – Land Ownership Confirmation Letter. No land acquisition, displacement, or loss of assets is required. Temporary Risks Only: Short-term access disruption to canal banks and footpaths during excavation; Temporary difficulty accessing farms or water points/division boxes; Perceived concerns about fairness in water distribution during works.	Maintain open community access routes and farm paths wherever possible; Use temporary bypass paths and clearly mark safe pedestrian areas; Provide advance notice (48–72 hours) before temporary flow interruptions or access restrictions; Coordinate daily with the WUC to manage water distribution schedules;	Consultation records; Access route signage; WUC/Canal Committee coordination logs GM system	Contractor (implementation); State PIU (liaison & awareness) FAO Supervising Engineer (verification); NPCU (oversight)	Pre-construction & Construction	Daily access checks; Weekly community updates	Included in contract price
ESS6 – Biodiversity Conservation						
Minor vegetation clearance along canal banks; Temporary disturbance to livestock and small fauna using canal corridors; Short-term	Limit vegetation removal to areas strictly needed for canal shaping; Avoid harming livestock; maintain access routes for grazing animals; Ensure	Hand tools with controlled clearing techniques were required; Site supervision checklists	Contractor (implementation); FAO Supervising Engineer (monitoring); State PIU (coordination)	Construction	Daily supervision during clearing; Weekly monitoring by FAO SE	Included in contract or price

alteration of micro-habitats during excavation. Note: No sensitive species or critical habitats identified during the baseline survey. Impacts are site-specific and fully reversible.	machinery operates only within the existing canal footprint; Prohibit dumping spoil in vegetated or grazing areas.					
ESS8 – Cultural Heritage						
Low probability of encountering cultural or historical materials during excavation Note: No known cultural heritage sites are located within the project's footprint, but chance finds remain possible.	Apply the WB Chance Finds Procedure; Immediately stop work if artifacts or bones of dead bodies are discovered; Notify State MoAI PIU, NPCU and elders; Resume works only after official written clearance.	Chance Finds Procedure; Reporting forms; Barrier tape/fencing materials	Contractor (implementation); FAO Supervising Engineer (verification); NPCU – MoAI (oversight)	Construction	Activate procedure only if triggered; Immediate reporting within same day	Contract or cost (no additional budget required)
ESS10 – Stakeholder Engagement and Information Disclosure						
A. Inclusion & Participation Risks: Exclusion of women, youth, minority, and vulnerable groups from consultations and project decisions; Poor communication causing confusion about project benefits or schedules; B. Information Disclosure Risks: Insufficient dissemination of project information to farmers and	A. Inclusion Measures: Implement the Stakeholder Engagement Plan (SEP) throughout project stages; Hold inclusive consultations ensuring participation of women, youth, elders, WUC members, and vulnerable groups; Provide schedules, updates, and notices in simple local Somali language. B. Information Disclosure: Regularly inform communities of	Stakeholder Engagement Plan (SEP); GM tools (register, hotline, complaint forms); Consultation attendance sheets; Community information boards	NPCU – MoAI (oversight); Southwest State PIU (community engagement); FAO Technical Assistance (support & training); Contractor (on-site disclosure, GM awareness)	Pre-construction & Construction	Weekly community updates; Monthly GM reviews; Consultations as needed	Included in project management budget; Included in contract or obligations

<p>water users; Limited understanding of temporary water disruptions or construction impacts; C. GM Risks: Low awareness or poor access to the grievance mechanism; Difficulty monitoring social harm or addressing complaints promptly.</p>	<p>construction timelines, flow interruptions, and safety precautions; Share updates through WUCs, village leaders, and State PIU; Display key information on boards at site and village centers. C. GM Strengthening: Disseminate/publicize GM channels widely (phone numbers, focal persons, complaint boxes); Maintain GM logs at PIU & contractor level; Provide feedback to complainants and close cases promptly; Monitor GM performance monthly and escalate cases if unresolved.</p>					
<p>SEA/SH – Sexual Exploitation, Abuse & Harassment</p>						
<p>Risk of SEA/SH involving workers and community members; Worker–community interaction increasing vulnerability of women and girls; Underreporting due to stigma or fear; Security personnel misconduct; Cross-cuts ESS1, ESS2, ESS4 & ESS10.</p>	<p>Implement and monitor the SEA/SH Action Plan; Mandatory Code of Conduct (CoC) for all workers and security staff; Conduct SEA/SH awareness and prevention sessions for workers and communities; Provide confidential, survivor-centered SEA/SH GM reporting pathway; Train SEA/SH community focal points;</p>	<p>SEA/SH Action Plan; Signed CoCs; Confidential GM channels; Training & sensitization materials; Focal point appointment letters</p>	<p>Contractor (implementation); FAO Technical Assistance (training & oversight); FAO Supervising Engineer (verification); State PIU (community awareness); NPCU (compliance)</p>	<p>Construction</p>	<p>Monthly worker training Continuous GM availability; Weekly supervision</p>	<p>Included in contract price; Included in TA & project management budget</p>

	Ensure separate sanitation facilities for men and women on site; Immediate referral of survivors to appropriate support services.						
--	--	--	--	--	--	--	--

7. Environmental & Social Monitoring Plan

The Environmental and Social Monitoring Plan describes how the implementation of mitigation measures will be tracked and verified during rehabilitation. Monitoring ensures that safeguards commitments are being followed, emerging issues are addressed promptly, and corrective actions are taken when required. It also clarifies the roles of the Contractor, FAO, the State PIU, and the NPCU in supervising compliance with environmental and social requirements. All monitoring activities are covered under the ESMP budget and project supervision costs. The table 4 below presents the indicators, methods, responsibilities, and reporting arrangements for continuous monitoring of ESMP implementation.

7.1. Objectives of Environmental and Social Monitoring

The monitoring program aims to:

- Track the effectiveness of mitigation measures outlined in the ESMP
- Ensure compliance with relevant national and international environmental and social standards
- Identify emerging issues that require corrective action
- Document contractor performance (ESHS compliance)
- Provide evidence-based reporting to FAO, MoAI, MoECC, and the World Bank
- Ensure community health, safety, and consistent GM functioning
- Verify that construction activities do not adversely affect farming activities and water availability

Table 9 - Environmental & Social Monitoring Plan

ESS / Area	Monitoring Indicators	Monitoring Method	Responsibility	Frequency	Reporting To
<i>ESS1 – E&S Risk Management</i>	Embankment stability Water flow continuity Implementation of ESMP/C-ESMP Conflict incidents logged	Site inspections Photographic evidence Daily logs GM database reviews	Contractor/FAO SE/State PIU	Daily / Weekly	NPCU & FAO
<i>ESS2 – Labor & OHS</i>	PPE use Worker attendance & contracts Toolbox talks conducted Worker GM cases handled OHS incidents & RCA reports	Observation Worker registers OHS logs GM review	Contractor/FAO SE	Daily / Weekly / Monthly	NPCU
<i>ESS3 – Pollution & Resource Efficiency</i>	Dust & noise levels Spoil disposal compliance Waste segregation TDS/TSS testing results Fuel/oil spill logs	Visual inspection Water & soil testing WMP logs	Contractor/FAO SE	Daily / Weekly	State PIU / NPCU

<i>ESS4 – Community Health & Safety</i>	Safety signage & fencing Traffic control measures Debris removal Security conduct logs	Safety audits Community feedback GM review	Contractor/FAO SE	Weekly	NPCU
<i>ESS5 – Temporary Access Management</i>	Access routes open Bypass paths functional No complaints on blocked access	Site inspection WUC coordination logs	Contractor/FAO SE	Daily	PIU / FAO
<i>ESS6 – Biodiversity</i>	Vegetation disturbance minimized Livestock access maintained	Field observation	Contractor/FAO SE	Weekly	NPCU
<i>ESS8 – Cultural Heritage</i>	Chance finds managed correctly	Review of Chance Finds records	Contractor/FAO SE	If triggered	NPCU
<i>ESS10 – Stakeholder Engagement</i>	Consultations conducted Information displayed GM usage & closure rate	SEP records GM monitoring	State PIU/FAO TA	Weekly / Monthly	NPCU
<i>SEA/SH – Cross-cutting</i>	CoC compliance SEA/SH training delivered SEA/SH GM cases managed confidentially	Training records CoC logs GM review	Contractor/FAO TA/State PIU	Monthly	NPCU
<i>Note: All monitoring activities are embedded in the ESMP budget and project management costs; no separate monitoring cost line is required.</i>					

7.2. Monitoring Approach

The monitoring framework for the Ali Daahir Primary Canal rehabilitation is designed to ensure that all environmental and social mitigation measures are implemented effectively, consistently, and in full compliance with project standards. Monitoring activities will be conducted at multiple levels and frequencies to provide continuous oversight throughout the construction period.

Daily monitoring will be undertaken by the contractor through routine site inspections to assess adherence to environmental, health, and safety requirements. These inspections enable rapid identification of non-compliance, unsafe practices, or emerging risks, and allow the contractor to implement immediate corrective actions.

Weekly monitoring will be conducted jointly by the contractor and FAO field teams. These joint inspections focus on verifying compliance with environmental safeguards, occupational health and safety procedures, waste management, dust control, watercourse protection, and community safety protocols. The collaborative approach ensures consistent interpretation of standards and promotes shared accountability between the implementing partners.

At the program level, FAO safeguards staff will carry out monthly monitoring missions. These missions provide a more comprehensive review of ESMP implementation, evaluate cumulative impacts, verify the accuracy of contractor reporting, and assess the responsiveness of mitigation actions to environmental and social risks.

Quarterly monitoring will involve the preparation of consolidated ESMP performance reports. These reports synthesize findings from daily, weekly, and monthly monitoring activities, document the status of mitigation measures, identify recurring issues, and outline corrective actions required for the next reporting period.

Monitoring also includes continuous oversight of the Grievance Mechanism. All complaints received through the GM hotline, emails, contractor focal points, or community channels will be tracked, analyzed, and assessed for trends. The effectiveness of grievance resolution processes will be evaluated to ensure timely, transparent, and fair handling of concerns raised by community members, workers, or stakeholders.

To support transparency and traceability, monitoring teams will collect photographic evidence, GPS-referenced observations, and field verification notes during all site visits. These records form part of the official ESMP monitoring files and assist in verifying compliance or documenting areas requiring intervention.

Community engagement is also an integral component of monitoring. Regular consultations with farmers, Water Users Associations (WUAs), and local leaders provide qualitative feedback on water distribution, access conditions, construction disturbances, and overall project impacts. Community insights complement technical monitoring and help ensure that local concerns are incorporated into corrective action plans.

Together, these coordinated monitoring activities provide a robust mechanism for ensuring that the Ali Daahir Primary Canal rehabilitation is implemented in a safe, environmentally responsible, and socially responsive manner aligned with the ESMP and World Bank requirements.

Monitoring will be integrated with the Project SMP/SRA (latest version), especially regarding security, access control, and safe site management.

7.3. Environmental and Social Monitoring Matrix

Table 10 - Environmental & Social Monitoring Framework

Parameter Monitored	Monitoring Indicators	Method	Frequency	Responsible Entity	Reporting
Excavation works (1.0 km)	Excavation depth, slope stability, absence of spoil blockages	Field inspection, photos	Daily	Contractor	Daily Log
Division boxes (6 units)	Stability of excavated areas during demolition/re rehabilitation construction	Field checks	Weekly	FAO + Contractor	Weekly Checklist
Culverts (1 unit)	Flow unobstructed, safe work zones	Visual inspection	Weekly	FAO + Contractor	Weekly Checklist
Concrete intake structure	Structural integrity, worker safety	Visual checks	Weekly	FAO	Monthly Report
Waste management	No debris in farmland or watercourses	Direct observation	Daily	Contractor	Daily Log
Dust and noise	Within acceptable levels	Observation/interviews	Weekly	FAO	Monthly Report

Traffic and machinery safety	Signage, safe access for farmers	Observation	Daily	Contractor	Daily Log
Community health & safety	Safe passage, warnings, barriers	Field check	Weekly	FAO + Contractor	Weekly Checklist
GM functioning	Complaints recorded & resolved	Log review	Weekly	FAO Safeguards	Monthly & Quarterly
Worker OHS compliance	PPE, toolbox talks, incident reports	Field check	Daily	Contractor	Daily Log
Gender inclusion	Participation of women in feedback mechanisms	Meeting records	Monthly	FAO	Monthly Report
Water availability to farmers	No prolonged disruption	Farmer interviews	Weekly	FAO + WUA	Weekly Summary

7.4. Incident Reporting Requirements

- Serious incidents (Level 1–2 per WB) → reported to FAO within 24 hours
- Contractor prepares initial incident report
- FAO conducts verification and prepares submission to World Bank
- Root-cause analysis and corrective measures implemented within 72 hours

7.5. Monitoring Documentation and Reporting Schedule

Required Documentation:

- Daily Contractor ESHS Log
- Weekly Joint Inspection Checklist
- Monthly FAO Safeguards Report
- Quarterly Consolidated ESMP Report
- Incident Reports (within 24 hours)
- GM Log (updated continuously)

Reporting Timeline

- Daily: Contractor logbook
- Weekly: Site inspection checklist
- Monthly: Environmental & social monitoring report
- Quarterly: Comprehensive ESMP compliance report
- As needed: Incident notifications

7.6. Capacity Building and Training Plan

Effective implementation of this ESMP depends on the capacity of the contractor, supervising institutions, and community structures to understand and apply the environmental and social requirements. The capacity-building activities will:

- Familiarize all actors with the ESMP, World Bank ESF requirements, and relevant national regulations.
- Strengthen the contractor’s ability to prepare and implement a Contractor ESMP (C-ESMP), including OHS, GM, SEA/SH, and waste management.
- Equip the PIU and supervising engineers to monitor ESMP compliance and report effectively.
- Build the capacity of the Canal/Water User Committee and community representatives to support operation and maintenance (O&M), use the GM, and promote GBV/SEA/SH awareness.
- Ensure all workers receive induction and continuous toolbox talks on OHS, Code of Conduct, GM, and SEA/SH prevention.

These trainings will be delivered jointly by FAO (under the Technical Assistance arrangement), the State MoAI PIU, and the contractor’s OHS/E&S team.

Table 11 - Summary of Capacity Building Plan

Target Group	Training Topic(s)	Timeline / Frequency	Type / Modality	Lead Facilitator(s)	Cost / Responsibility
Prospective Contractors (bidders)	Key E&S clauses in bidding documents; ESMP and ESF obligations; minimum OHS, LMP and SEA/SH requirements	Once, during pre-bid / pre-contract briefing	Short indoor or virtual session	FAO E&S Specialist, NPCU/PIU	Covered under FAO TA / project preparation
Contractor’s Project Manager, Site Engineer, OHS/E&S Officer, Foremen	C-ESMP preparation and implementation; OHS procedures and emergency response; Waste Management Plan; Worker and Community GM; SEA/SH Action Plan and Code of Conduct	At project start (mobilization)	Half-day face-to-face workshop plus on-site practical session	FAO E&S Specialist and State PIU E&S staff	Covered under FAO TA / PIU operating budget
PIU E&S Specialist and Supervising Engineer (State MoAI / NPCU)	Supervision and monitoring of ESMP/C-ESMP; WB ESF and national ESIA requirements; review of contractor E&S reports; use of simple monitoring tools	At start of works and one mid-term refresher	Face-to-face or online training session	FAO E&S Specialist	Covered under FAO TA / PIU operating budget
Canal/Water User Committee and Community Representatives (elders, women, youth)	Basic canal O&M; community role in ESMP monitoring; GM access and referrals; GBV/SEA/SH awareness; community safety around works	Once during mobilization and one refresher before completion	On-site participatory training in the canal village	FAO and PIU E&S staff, with WUC	Covered under FAO TA / PIU community engagement budget

All Construction Workers (including drivers and security staff)	OHS (PPE use, site rules, safe excavation, traffic management); Code of Conduct; worker GM; SEA/SH prevention and sanctions; appropriate security behavior	Induction for all new workers and weekly toolbox talks	On-site toolbox talks / tailgate sessions	Contractor's OHS/E&S Officer, supervised by supervising engineer / FAO	Included in contractor's contract cost
---	--	--	---	--	--

8. Implementation Arrangements

Effective implementation of the subproject rehabilitation activities requires close coordination among the Federal MoAI, the Southwest State MoAI PIU, FAO as the Technical Assistance provider, the contractor, and community structures. Responsibilities have been organized to ensure that environmental and social measures are applied consistently and in full alignment with the World Bank ESF and national regulations.

The main institutional responsibilities are as follows:

Table 12 - Implementation arrangement - main institutional responsibilities are as follows

Institution	Responsibility
MoAI – Federal Ministry of Agriculture and Irrigation	Provides national-level oversight; ensures policy alignment; monitors overall ESMP implementation; supports coordination with federal institutions and project stakeholders.
PIU – Project Implementation Unit (Southwest State MoAI)	Primary implementing entity; manages day-to-day subproject execution; supervises contractor performance; monitors ESMP, OHS, and GM; coordinates with FAO, NPCU, and State Environmental Authority; ensures full compliance with World Bank ESF.
Southwest State Ministry of Agriculture and Irrigation (State MoAI)	Leads state-level supervision; validates technical activities; coordinates with WUA and district authorities; ensures adherence to state irrigation management policies; facilitates community engagement and land-use oversight.
NPCU – National Project Coordination Unit	Provides national coordination and harmonization across S-FSRP subprojects; reviews and approves the C-ESMP; conducts periodic monitoring; provides E&S safeguards oversight; reports to the World Bank on compliance.
FAO Somalia – S-FSRP Engineering & Safeguards Team	Provides technical quality assurance; ensures designs, construction methods, and ESMP implementation meet World Bank ESF and GIIP; verifies contractor deliverables; conducts safeguards training; monitors GM and environmental compliance.
Southwest State Environmental Authority (MoECC – State Level)	Issues environmental permits; reviews and approves ESMP; conducts site inspections; enforces EPMA 2024 requirements; monitors waste management, pollution control, and adherence to environmental conditions.
Afgoye District Administration	Facilitates local coordination, site access, and basic security; supports community engagement; helps resolve local issues and liaises between the project and community-level structures.
Afgoye Canal Committee & Water User Association (WUA)	Provides operational knowledge of water distribution; supports equitable irrigation management; mobilizes farmers for consultations; assists in monitoring construction impacts; participates in community GM functions.
Contractor	Implements rehabilitation works per design and ESMP; prepares and follows C-ESMP; ensures OHS, CHS, waste management, GBV/SEA/SH mitigation, and emergency response; maintains E&S records; ensures worker GM functions; trains workers and enforces Code of Conduct.

Subcontractors	Adhere fully to contractor obligations, ESMP requirements, and safety standards; follow C-ESMP; support reporting and compliance activities under contractor supervision.
----------------	---

Reporting follows a coordinated structure: the contractor submits weekly updates to FAO and the State PIU; FAO verifies compliance and prepares consolidated supervision notes; and the NPCU compiles and submits environmental and social performance reports to the World Bank. Serious incidents or accidents must be reported within 24 hours in line with ESF and project protocols.

At the end of construction, FAO and the State PIU will conduct a joint inspection with the contractor and community representatives to confirm that all works meet design and safeguards requirements. Following this, the rehabilitated canal will be handed over to the Southwest State MoAI and the Water User Committee for continued operation and maintenance, with periodic post-construction monitoring to ensure sustainability.

9. Stakeholder (community) consultation

This section summarizes the stakeholder engagement process undertaken for the Ali Daahir Primary Canal Corridor rehabilitation subproject. The consultations were conducted in accordance with World Bank ESS10 (Stakeholder Engagement and Information Disclosure), FAO's Environmental and Social Standards, and the requirements of the EPMA 2024 and Somalia ESIA Regulations 2024. The objective was to ensure that affected communities, local authorities, and user groups were meaningfully engaged in discussing project impacts, benefits, risks, and mitigation measures.

The Somalia Food Systems Resilience Project (S-FSRP) operates three grievance channels: (i) General Community GM (ESS10 and ESS5); (ii) Workers' GM (ESS2); and (iii) SEA/SH-specific confidential reporting mechanism (ESS1 and ESS2). Each channel operates independently to ensure appropriate handling and confidentiality.

9.1. Objectives of Consultation

The consultations aimed to:

- Provide clear and accessible information about the rehabilitation works
- Understand local concerns, expectations, and priorities
- Identify potential environmental and social risks from the community perspective
- Document local knowledge relevant to canal use, maintenance, and water distribution
- Enhance stakeholder ownership of the project
- Ensure inclusion of women, youth, vulnerable groups, and smallholder farmers
- Establish communication and GM channels prior to rehabilitation

9.2. Stakeholder Groups Engaged

Stakeholders consulted for this ESMP included:

- **Primary Stakeholders:**

The primary beneficiaries and affected stakeholders along the Ali Daahir Primary Canal include a diverse group of water users and farming households who rely directly on the canal for irrigation and agricultural production. These groups encompass farmers situated at both the head-end and tail-end sections of the command area, each experiencing different levels of water reliability and therefore holding varying priorities in relation to the rehabilitation works. Tail-end farmers, in particular, face chronic shortages during peak demand seasons, making them highly dependent on improved conveyance efficiency and structural restoration.

Women farmers and women-headed households constitute another significant stakeholder group. Many of these households depend on small-scale farming for their livelihoods and are often more vulnerable to disruptions in irrigation schedules or access constraints during rehabilitation. Their participation in consultations and decision-making is essential to ensure that the canal rehabilitation contributes to equitable and inclusive agricultural benefits.

Land-poor farmers, including sharecroppers and small plot cultivators, also depend heavily on the canal for their seasonal production cycles. Because their landholdings and income sources are limited, even minor interruptions in water supply can affect household food security and income stability. Seasonal agricultural

laborers—many of whom rely on short-term employment associated with farming activities—are also indirectly affected, as improved irrigation reliability supports more frequent and predictable farming operations.

- Collectively, these groups form the core community of users whose livelihoods, income, and food security are closely linked to the performance of the Ali Daahir Primary Canal, making their engagement and inclusion central to the ESMP implementation process.

- **Institutional Stakeholders:**

The institutional framework supporting the rehabilitation of the Ali Daahir Primary Canal Corridor involves several government bodies, community institutions, and development partners with defined roles in planning, oversight, and implementation. At the local level, the Afgoye District Administration provides administrative coordination and facilitates communication between the project team and community leaders across Mareerey village and surrounding settlements. Their involvement ensures that the rehabilitation activities are aligned with district development priorities and local governance structures.

The Southwest State Ministry of Agriculture and Irrigation (MoAI) plays a central technical role, providing oversight on irrigation management, water allocation, and engineering standards. MoAI works closely with Water User Associations (WUAs) and the Afgoye Canal Committee—two key community-based institutions responsible for mobilizing farmers, coordinating water distribution schedules, validating on-site information, and supporting maintenance practices. These bodies contribute essential local knowledge and help ensure that rehabilitation works address practical needs faced by irrigators.

Environmental review and compliance are overseen by the Southwest State Environmental Specialist, operating under the Ministry of Environment and Climate Change (MoECC). This office is responsible for ensuring that the canal rehabilitation aligns with the provisions of the Environmental Protection and Management Act (EPMA 2024), the ESIA Regulations 2024, and state-level environmental permitting requirements. The Environmental Specialist also monitors ESMP implementation and provides regulatory guidance throughout the project cycle.

At the federal and project-implementation level, the Food and Agriculture Organization (FAO), through the Somalia S-FSRP safeguards and engineering teams, delivers technical leadership and ensures adherence to the World Bank Environmental and Social Framework (ESF), the S-FSRP safeguard instruments, and Good International Industry Practice (GIIP). These teams coordinate engineering designs, supervise environmental and social risk management, support contractor compliance, and manage project-level grievance redress systems.

Together, these institutions provide an integrated governance and oversight structure that ensures the rehabilitation of the Ali Daahir Primary Canal is technically sound, environmentally compliant, socially inclusive, and aligned with broader state and national agricultural development goals.

- **Other Interested Parties:**

In addition to the formal institutional stakeholders, the project engages closely with nearby community elders and traditional leaders who play an essential role in local governance, dispute resolution, and community mobilization. These leaders are often the primary point of communication for conveying project information, coordinating community participation during consultations, and supporting conflict-sensitive engagement when canal access or rehabilitation activities affect households or farmland. Their involvement is particularly important for ensuring that decisions reflect community norms, land-use practices, and shared resource management traditions.

Local traders who depend on agricultural production also form an important stakeholder group. These traders—who operate in village markets, collection centers, and distribution points—rely on stable crop yields and predictable irrigation cycles to sustain their businesses. Disruptions to water supply or delays in rehabilitation can affect the availability, quality, and timing of agricultural produce, with direct implications for their income and the broader market chain. Improved irrigation reliability following canal rehabilitation is therefore expected to support increased market activity, reduced seasonal scarcity, and strengthened rural–urban linkages.

9.3. Stakeholder consultation Methodology

Consultations were carried out through:

- **Community meetings (primary method)**
Large group sessions held with farmers, elders, and local leaders to present project information, collect feedback, and discuss anticipated impacts and mitigation measures.
- **Focus group discussions**
Smaller, thematic sessions with specific groups—such as women farmers, tail-end users, or youth—to capture perspectives that may not emerge in larger meetings.
- **Key informant interviews**
Targeted interviews with knowledgeable individuals, including WUA representatives, canal committee members, and local authorities, to obtain detailed technical, social, and operational insights.
- **Direct observation and field walkthroughs**
On-site assessments conducted jointly with community representatives to observe canal conditions, identify problem areas, and validate technical and environmental findings.
- **Informal discussions with farmers during assessment**
Spontaneous conversations held during field visits, allowing farmers to share practical concerns, operational challenges, and location-specific insights.

Meetings were conducted in the local language and facilitated by FAO safeguards staff and MoAI field officers. Notes, photos, and attendance records were collected and included in the Annexes.

9.4. Consultation Event Summary

A formal community consultation meeting was held specifically for this ESMP. The meeting included:

25 participants total (20 male farmers and 5 female farmers)

Photos documenting the consultation have been provided and are included in the ESMP Annex 5.

Meeting Date & Venue

- Afgoye District, near the Ali Daahir Primary Canal Corridor
The consultation was held within the project area to ensure direct participation from farmers, elders, and other local stakeholders familiar with the canal’s conditions and challenges.
- Organized jointly by FAO, MoAI, and community leadership
The session was coordinated by the Food and Agriculture Organization (FAO), the Southwest State Ministry of Agriculture and Irrigation (MoAI), and local community leaders, ensuring both technical and community perspectives were represented.

Purpose

- **To discuss rehabilitation plans**
Presenting the proposed canal rehabilitation activities, expected timelines, and technical approach to community members.
- **To confirm the project scope**
Ensuring that stakeholders understood the planned interventions, the geographical limits of work, and the types of structures to be rehabilitated.
- **To identify community concerns**
Providing space for farmers and water users to raise issues related to water interruptions, safety, access, crop impacts, and labor interactions.
- **To establish expectations and grievance procedures**
Communicating the Grievance Mechanism (GM), hotline numbers (570-NPCU and 540 -MOAI Southwest, 327-FAO Somalia), roles of local focal persons, and channels for submitting feedback or complaints during implementation.

Issues Raised by the Community

Table 13 - The Key issues raised during the consultation

Issue Raised	Description from Community Feedback
Severe siltation and blockages	Farmers emphasized that long-term neglect has reduced canal depth and flow capacity.
Inequitable water distribution	Tail-end farmers receive insufficient irrigation due to blockages in division boxes.
Flooding near culverts	Blocked culverts cause localized flooding during high-flow periods.
Maintenance gaps	Lack of regular desilting leads to recurring inefficiency.
Safety concerns during rehabilitation	Machinery movement may affect livestock and children.
Crop access restrictions	Farmers requested early notification before excavation near their plots.
Women’s participation	Women requested clear communication channels for water rotation schedules and grievance reporting.
Need for long-term maintenance strategy	Community wants WUA and MoAI involvement strengthened.

Responses and Project Commitments

Table 14 - Response to the issues Key raised by the community

Community Issue	Project Response / Commitment
Siltation and blockages	Full excavation of 1.0 km established as part of rehabilitation scope.
Division box dysfunction	All 6 division boxes will be reconstructed in reinforced concrete.
Intake and Culvert flooding	Intake and Crossing culvert will be rehabilitated to improve free flow.
Maintenance gaps	Post- rehabilitation maintenance guidelines will be established with WUA.
Construction safety	Contractor will implement OHS and CHS measures, signage, and safe access.
Access disruptions	Work schedule will be shared weekly; farmers will be notified before excavation near plots.
GM access	Hotline numbers (570-NPCU and 540 -MOAI Southwest, 327- FAO Somalia) shared; community can raise complaints at any time.
Gender inclusion	Women will continue to be included in consultations and GM processes.

Inclusion of Vulnerable and Marginalized Groups

The consultation ensured participation of:

- The consultation process intentionally incorporated the perspectives of vulnerable and marginalized groups who rely on the Ali Daahir Primary Canal for their livelihoods. Participation was secured from women farmers, older farmers, land-poor households, and tail-end irrigators—groups that often experience unequal access to irrigation, limited decision-making power, or elevated exposure to livelihood risks.
- Specific measures were taken to ensure meaningful engagement. The consultation was scheduled at a time and location convenient for women and individuals with limited mobility. The project team used clear and simple explanations when discussing the Grievance Mechanism (GM), rehabilitation activities, and potential impacts to ensure accessibility for participants with varying levels of literacy. Attendance was recorded using gender-disaggregated data to document inclusive participation.
- No vulnerable group expressed objections to the rehabilitation activities, and all participants indicated that improved canal functionality would provide equitable benefits for the community, especially for those at the tail-end of the irrigation system who currently face recurrent water shortages.

Future Consultation Plans

Stakeholder engagement will continue throughout the full project cycle to ensure transparency, responsiveness, and alignment with community needs.

During rehabilitation

- Weekly updates will be provided to farmers through community meetings, WUA announcements, and communication through local leaders.
- GM procedures—including hotline numbers (570 - NPCU and 540 -MOAI Southwest, 327- FAO Somalia)—will be regularly communicated, and grievances will be monitored and addressed promptly.
- Continuous coordination will take place with village elders, the Water User Association (WUA), and the Ministry of Agriculture and Irrigation (MoAI) to ensure information flow and manage irrigation schedules during rehabilitation.

Post- rehabilitation

- Feedback sessions will be held with farmers to evaluate the performance of the rehabilitated canal, identify any operational issues, and assess user satisfaction.
- Discussions will be conducted with the WUA and MoAI to establish routine maintenance responsibilities and scheduling to sustain long-term canal functionality.
- Seasonal review meetings will be held to evaluate irrigation reliability across planting cycles and ensure continuous improvement in water distribution practices.

10. Grievance Mechanism

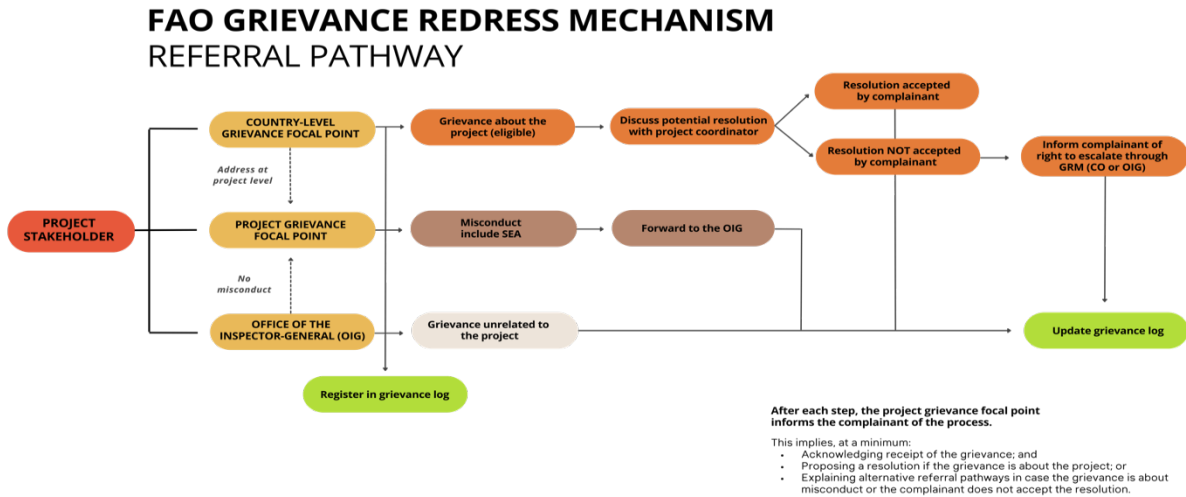


Figure 5- FAO grievance redress mechanism

1. Main contact details

If you have a grievance or suggestion about the project S-FSRP-TA, you can use any of the below channels free of charge to contact us. Your grievance will be handled confidentially by the Food and Agriculture Organization of the United Nations.

The GM will include multiple channels that are appropriate to the project context, the below are some suggestions but for this project mainly Compliant hotline and toll-free applied. The FAOR/Budget Holder is **advised** to revise and add as appropriate. If information on the project was disclosed (requirement for moderate and high-risk projects), include the link to FAO's disclosure portal here.

Table 15 - GM Contacts

Phone:	Hotline numbers (570- NCPU, 540- MOAI Southwest and 327-FAO Somalia)
--------	---

2. Purpose of GM and guiding principles

This is the Grievance Mechanism for the office of FAO Somalia project's called S-FSRP-TA. This project will be led by the Food and Agriculture Organization (FAO) and will be implemented with **Government partners, the Federal and States' MoAI** by establishing a government-led project team which will be responsible for daily coordination of the project activity, in a period of **01st August 2025 to 31st July 2027**. The purpose of this GM is, at field level to file

grievances related to this project in a given time period. Contact information and information on the process to file a grievance will be disclosed in all meetings, workshops, and other related events throughout the duration of the project. In addition, it is expected that all communication and awareness raising material to be distributed will include the necessary information regarding the contacts and the process for filing grievances.

The project/FAO will also be responsible for documenting and reporting as part of the safeguards performance monitoring on any grievances received and how they were addressed.

FAO is committed to ensuring that its projects and programs are implemented in accordance with the Organization's environmental and social obligations. Concerns of non-compliance must be addressed at the closest appropriate level, i.e., at the project management/technical level, and if necessary, at the FAO Country Office or Regional Office level. If a concern or grievance cannot be resolved through consultations and measures at the project management/technical level, a grievance requesting a Compliance Review may be filed with the FAO Office of the Inspector General in accordance with the Guidelines for Compliance Reviews Following Grievances Related to the Organization's Environmental and Social Standards¹. Project Managers will have the responsibility to address concerns brought to the attention of the officially designated project grievance focal point.

The **principles** to be followed during the grievance resolution process include confidentiality, impartiality, respect for human rights, including those pertaining to indigenous peoples, compliance of national norms, coherence with the norms, equality, transparency, honesty, and mutual respect.

3. Who can file a grievance and how

Anyone can file a grievance or suggestion related to the project/office. Your grievance will be handled confidentially. To facilitate our comprehension of your grievance, please include as much information as possible. For example: what happened, who was involved, when did it happen.

4. From grievance to resolution

For grievance resolution, this project has applied the existing Country level GM system which have been exercised to all FAO Somalia projects. Accordingly, the grievance resolution process follows various stages stated below.

1. In the instance in which the individual or group have the means to directly file the grievance, he/she has the right to do so, presenting through the indicated channels of the project/office (i.e.: email, mailbox, phone, etc.) mostly by phone. The process of filing a grievance will duly consider confidentiality, and if requested by the individual or group bringing the grievance, anonymity as well as any existing traditional or indigenous dispute resolution mechanisms and it will not interfere with the community's self-governance system.
2. The individual or group bringing the grievance files a grievance through one of the channels of the grievance mechanism. This will be sent to the Project or FAO Decentralized / Country Office Grievance focal point to acknowledge and log the grievance, assess whether it is eligible and determine responsibility for attempting to resolve the grievance in line with the processes agreed for the project. The confidentiality of the grievance must be preserved during the process. For every grievance received by the project grievance focal

¹ <https://www.fao.org/3/i4439e/i4439e.pdf>

point, written proof will be sent within ten (10) working days; afterwards, a resolution proposal will be made within thirty (30) working days.

The Grievance focal point will also be responsible for recording the grievance and how it has been addressed if a resolution was agreed.

3. If the situation is too complex, or the individual or group bringing the grievance does not accept the proposed resolution, the Grievance focal point must be informed and they must send the grievance to the next highest level, until a solution or acceptance is reached.
4. In compliance with the resolution, the person in charge of dealing with the grievance may interact with the individual or group bringing the grievance, or may call for interviews and meetings, to better understand the reasons.

Resolution

Upon acceptance of a solution by the individual or group bringing the grievance, a confidential record will be maintained.

Table 16 - GM Resolution- Record contact details

Review Level	Contact Details
Project Level	Bare Ibrahim- ibrahim.bare@fao.org - Compliance and AAP Monitoring Officer
Next level	Bakhta Boualam- Bakhta.Boualam@fao.org - Head of Compliance, Risk Management and Accountability FAO Somalia. The project selects to use the country GM.

Office of the Inspector General (OIG)	<p>Contact FAO's independent Office of the Inspector General: To report non-compliance with FAO's environmental and social management guidelines in case your grievance could not be resolved through the previously mentioned channels; To report non-compliance with FAO's environmental and social management guidelines in case you have a good reason for not approaching the project management (e.g., fears about your safety); To report possible fraud and other corrupt practices, as well as other misconduct such as sexual exploitation and abuse.</p> <p>By confidential hotline (online form & by free-of-charge worldwide phone numbers with interpreters available 24 hours/day): fao.ethicspoint.com By e-mail: Investigations-hotline@fao.org or inspector-general-office@fao.org</p> <p>By mail: Office of the Inspector General Food and Agriculture Organization of the United Nations Viale delle Terme di Caracalla 00153 Rome, Italy</p>
---------------------------------------	--

GM Contacts and awareness raising

South West State has the following **FSRP** GM and GBV emails,

- GM Email: SWfsrPGM@gmail.com
- GBV Email: SWfsrpgbvs@gmail.com

Table 17 - GM Contacts and awareness raising details

FSRP GM & GBV EMAILS	LOCATION	REMARKS
SWfsrPGM@gmail.com	Southwest State of Somalia	State Level
SWfsrpgbvs@gmail.com	Southwest State of Somalia	State Level
GM@fsrp.gov.so	National FSRP GM Secretariat	National

HOTLINE NUMBER (FREE)	540	State Level-MOAI Southwest
HOTLINE NUMBER (FREE)	570	NCPU -Federal Level
HOTLINE NUMBER (FREE)	327	FAO SOMALIA
		<i>The free hotline number functions within 24 hours of the Project</i>

These emails are managed by the PIU Social Safeguard and GBV specialists of the Ministry. Any complaints related to the Southwest state of Somalia FSRP project issues will be handled and registered according to GM procedures and regulations.

Furthermore, Southwest MoAI–SWS plans to establish a state-level toll-free number for stakeholders and individuals with complaints to contact. Until this toll-free line is operational, clients will be able to access the national toll-free number at the state level (540).

11.ESMP Implementation Budget.

The Environmental and Social Management Plan (ESMP) includes costs associated with safeguards compliance, occupational health and safety (OHS), community engagement, waste management, monitoring, and reporting. For this subproject, the ESMP budget is calculated *at 5% of the total contract price.*

Table 18 - ESMP Budget Breakdown

ESMP Component	Description of Activities Covered	Revised Estimated Cost (USD)
1. OHS Implementation	PPE for workers, signage, fencing, first-aid kits, heat-stress measures, daily toolbox talks	\$3,300
2. Environmental Measures	Waste management, spoil disposal, dust suppression, erosion controls, spill-prevention materials	\$1,900
3. Social Safeguards	Community awareness, GBV/SEA/SH messaging, SEA/SH focal point support, community safety measures	\$1,800
4. GM Management	Complaint boxes, hotline operation, GM registers, documentation & visibility materials	\$800
5. Monitoring & Reporting	FAO/PIU joint monitoring, reporting tools, compliance verification, field follow-ups	\$1,900
6. Stakeholder Engagement (SEP)	Community consultations, meetings, disclosure materials	\$1,500
7. Capacity Building	Training on ESF, OHS, LMP, SEA/SH, GM for workers and PIU	\$1,400
Total ESMP Cost		\$12600

12. Annexes

Annex 1. Environmental and Social Screening

Environmental and Social Screening: For Rehabilitation of the 1.000 KM Ali Daahir Primary Canal and its Eight Auxiliary structures in Mareerey village

Project Name	Somalia Food System Resilient project (SFSRP) (P177816)		
Project Description	This project, under the Somalia Food Systems Resilience Program (S-FARP), involves the rehabilitation of the 1.000 KM Ali Daahir Primary Canal and its Eight Auxiliary Structures in Mareerey Village, Afgoye District, Southwest State of Somalia , to restore critical irrigation infrastructure, improve agricultural water access, and enhance community resilience to climate variability. Based on the environmental and social screening, the project carries an overall moderate risk rating , due primarily to temporary construction-related impacts such as soil erosion, water sedimentation, and worker safety, which will be mitigated through a detailed Environmental and Social Management Plan (ESMP) .		
Prepared By	Daud Mohamed Hussein	Date of Preparation	25/10/2025
Approved By		Date of Approval	

Screening Questions	Yes	No	E&S risk rating	Documents required
1. Does the project affect downstream water flows		No	Low	ESMP-the intervention is a rehabilitation, not a diversion or damming of flow.
2. Does it require clearing of trees, pasture/browse?	Yes		Moderate	ESMP
3. Does the subproject involve land acquisition and/or restrictions on land use?		No	Low	ESS5, not eligible for financing.
4 Does the subproject involve in activities that will result in the involuntary taking of land, relocation of households, loss of assets or access to assets that leads to loss of income sources or other means of livelihoods, and interference with households' use of land and livelihoods		No	Low	ESS5 not eligible for financing
5. Is the subproject located within or in the vicinity of any ecologically sensitive areas?		No	Low	Biodiversity Management Plan

Screening Questions	Yes	No	E&S risk rating	Documents required
6. Use water during or after construction, which will reduce the local availability of ground water and surface water?	Yes		Moderate	ESMP
7 Be located within or nearby environmentally sensitive areas (e.g., intact natural forests, mangroves, wetlands) or threatened species?		No	Low	Biodiversity Management Plan
8. Lead to soil degradation, soil erosion in the area?	Yes		Moderate	Biodiversity Management Plan
9. Create waste that could adversely affect local soils, vegetation, rivers and streams or ground water?	Yes		Moderate	WMP
10. Involve significant excavations, demolition, and movement of earth, flooding, or other environmental changes?	Yes		Moderate	Biodiversity management Plan
11. Be located in or near an area where there is an important historical, archaeological or cultural heritage site?		No	Low	Cultural Heritage Management Plan and Chance find procedure
12. Is an area where there have been insecurity incidents in the past 12 months?		No	Low	ESS4 security Management Plan
14. Result in transmission of zoonotic disease		No	Low	IPM
15. Will require use and application of inorganic fertilizers/pesticide/herbicide or fumigation?		No	Low	ESMP, WMP and SEP
16. Potential risk due to natural disaster hazards (such as flooding, drought, landslide, earthquake, etc.)		No	Low	ESMP
17. Potential biodiversity impacts		No	Low	Biodiversity Management Plan
18 Potential exposure to community health and safety risks due to water pan safety risks		No	Low	ESMP

EHS screening questions.

Project Name	Somalia Food System Resilient project
---------------------	--

Project Description	This project, under the Somalia Food Systems Resilience Program (S-FARP), involves the rehabilitation of the 1.000 KM Ali Daahir Primary Canal and its Eight Auxiliary Structures in Mareerey Village, Afgoye District, Southwest State of Somalia , to restore critical irrigation infrastructure, improve agricultural water access, and enhance community resilience to climate variability. Based on the environmental and social screening, the project carries an overall moderate risk rating , due primarily to temporary construction-related impacts such as soil erosion, water sedimentation, and worker safety, which will be mitigated through a detailed Environmental and Social Management Plan (ESMP) .			
Prepared By		Date of Preparation		
Approved By		Date of Approval		
	Question	Yes	No	E&S Rating
1	Does the project produce excessive noise and vibration	Yes		Moderate-Localized and temporary
2	Does the activities have adverse soil erosion effect		No	Low-Erosion and sediment control is a primary mitigation measure
3	Do the activities require large volumes of construction materials (e.g. gravel, stone, water, timber, firewood)?	Yes		Moderate-Due to potential unsustainable sourcing of gravel/sand and pressure on local water resources.
4	Are there proper measures to minimize and manage Solid wastes	Yes		Low-Waste water Management Plan-Planned measure
5	Are the activities located within or nearby environmentally sensitive areas (e.g. intact natural forests, mangroves, wetlands) or threatened species?		No	Low- Project site is mainly farmland not critical habitat nearby
6	Are the chemicals used in construction properly declared, packaged, labelled, stored, handled and disposed of in accordance with manufacturer's instructions?	Yes		Low-Planned measure for fuels, oils, etc.

7	Create waste that could adversely affect local soils, vegetation, rivers and streams or ground water?		No	Low- Low risk of waste leaching into soil and water proper disposal is essential
8	Are there proper channels to properly discharge wastewater discharges	Yes		Low-For management of any wastewater from works
9	Are the activities have potential exposure to community health and safety risks due to dam safety risks		No	Low-This is a canal Rehabilitation, not a dam.
10	Excavations & tunnels	Yes		Moderate-OHS Plan Excavation safety is a key worker risk
11	Are the activities going to lead to Over-exertion	Yes		Moderate-OHS Plan Worker training, mechanization, work schedules.
12	Are there proper precautionary measures to avoid slips & falls	Yes		Low-OHS Plan Planned measure.
13	Are workers provided by enough protective gears to avoid them being struck by objects	Yes		Low-OHS Plan Planned measure.
14	Are workers trained on the safety measures including the ones associated with moving machinery	Yes		Low-OHS Plan Planned measure.
15	The activities will not result in transmission of zoonotic disease	Yes		Low-standard worker hygiene practices are followed.
	<i>Safety</i>			
16	The transport activities will not be much as to cause traffic accidents	Yes		Low- Localized small logistics for the project
	Potential for high-risk activities including OHS			

E&S Screening	Results and Recommendation		
Screening Results: Summary of Critical Risks and Impacts Identified	Risk/Impact	Individual Risk/ Impact Rating	Mitigation At the end of the screen process, tabulate the mitigation measures in an ESMP Format (see below)
	Moderate	C	Summary of Screening Result Justification
Is Additional Assessment Necessary? Evaluate the Risks/Impacts and reflect on options (see below)	Screening Result		
	<ul style="list-style-type: none"> - Environmental and/or Social Assessment required where project is undertaken - Soil Erosion and Degradation - Community Health and Safety - Worker Health and Safety (OHS) - Cave-in or collapsing soil during excavation, posing danger to workers - Noise from construction machinery and culvert construction may disturb nearby farmers and workers and prolonged exposure could cause hearing issues for laborers 		Mitigation measures will follow CERC ESMF : <ul style="list-style-type: none"> - SEP - GM - SMP - LMP - OHS
	No ESIA is required.		
			This project was classified as Category C- Moderate
No ESIA & full ESMP is required		Simplified ESMP will be needed	

Annex 2: Public Consultation Documentation template/form-Completed

Public Consultation Documentation Template/Form – Completed

1. **Consultation Date:** 4/10/2025
2. **Sub-project Type:** Rehabilitation of Canal
3. **Specific Name of the Project:** Rehabilitation of Ali Daahir Canal
4. **Place of Consultation: State:** Southwest state, **Region:** Lower-Shabeele, **District:** Afaqoye, **Village (Specific site):** Buulofuulyo Village
5. **Purpose of Consultation:** The consultation was conducted to engage the Ali Daahir Canal community to discuss the planned rehabilitation works under the S-FSRP. The meeting aimed to:
 - Briefing the community on the objectives of the assessment to understand and cooperate
 - Discuss the current canal condition and irrigation and farming challenges.
 - Identify potential environmental and social risks and safeguards in line with World Bank’s ESS requirements.
 - Confirm community needs, priorities, and contributions during implementation and post implementation sustainability
 - Collect technical and socio-economic data to support assessment requirements (e.g., irrigated area before/after deterioration, number of farmers benefiting, changes in canal width/depth, and the condition of associated structures).
 - Ensure inclusive participation of women, youth, elders, and vulnerable groups.).
6. **Consultation Time Started:** 11:00 A.m
7. **Consultation Method:** *Interviewing and discussion, questionnaires (group discussions and individual interviews with elders, women, youth, and farmers)*
8. **Consultation Agendas/ Issues:**
 - Shortage of water conveyed by the canal due to reduced dimensions of the canal by accumulated silt and bank breaches community requested urgent rehabilitation to restore its original dimensions and can convey sufficient water.
 - Irrigation coverage has reduced and farmland productivity has declined due to both sedimentation and seasonal flooding.
 - Cross-culverts, intakes division boxes have deteriorated; community requested their rehabilitation.
 - The community requested installation of solar system for pumping the water for irrigation as they now incur high fuel cost for irrigating their farming land
 - Construction of elevated tanks for drip irrigation (there are boreholes available intended to use during winter time when river water depletion occurs)
9. **Additional Issues Raised During Consultation**
 - Lack of farm equipment/tools/machineries for improved productivity.
 - Need for certified seeds to increase agricultural production/yields.
 - Request for canal committee training on water management and operation & maintenance (O&M).
 - Provision of pesticides and fertilizers and to train farmers on their applications;
10. **Agreed Agendas/ Issues**
 - Canal rehabilitation is urgent and strongly supported by the community.

- The community agreed to cooperate with FAO/FSRP team and contractors during implementation and post-implementation.
- Restore the original dimensions of the canal to maximize water flow and ensure downstream users benefit.
- The community will contribute labor and support through the canal committee during rehabilitation works and to ensure O&M after rehabilitation.
- Contractor will schedule works in phases, notify communities in advance of any major disruption, and safeguard anything arise during works.
- FAO/FSRP to ensure timely communication and use of a Grievance Mechanism (GM) to address community concerns.

11. Disagreed Agenda/issues including Reasons for

- No major disagreements were recorded. The community emphasized to prioritize the rehabilitation of the canal.

12. Consultation Ended Time: 2:07 p.m

Consultation Facilitators' Name & Role:

Signature:

1. Abdirahman Nour, Civil Engineer

----- *Abdirahman* -----

Subproject's (IP) Seal: (optional) _____

Annex 3: Summary of the community meeting

No	District meeting held	Location meeting held	Dates of meeting conducted	No. of council/elders who attended	Number of women who attended	Number of men who attended	Subject discussed	What was agreed	Names of the attended members
1	Afgoye	Buulofuulyo	04/10/2025	5	5	5	<p>1. Deteriorated dimensions of the canal (reduced depth, bank breaches, accumulation of silt at the bed).</p> <p>3. Reduced conveyance capacity of the canal.</p> <p>3. Need to rehabilitate existing cross culverts, intake, division boxes and cross culverts</p> <p>4. need to install of solar system to irrigate agricultural land as a cheaper energy than high fuel cost</p>	<p>1. Community supported urgent intervention and rehabilitation of the canal</p> <p>2. Agreed to cooperate with FAO/FSRP/contractors during works.</p> <p>3. Restore canal dimensions and slope for water flow to downstream farms.</p> <p>4. Community will assist in O&M after rehabilitation for sustainable use of the water.</p> <p>5. Contractor to phase works, provide advance notification, and safeguard vulnerable assets.</p>	(Full names, phone numbers, and signatures attached in Annex 4)

Annex 4: Consultation attendants/Participants



Food and Agriculture
Organization of the
United Nations

Abidjare
615566008

FAOSO: ESS-01

13. Consultation Attendants/ Participants:

No.	Name of Participants	Age	Sex	Position	Mobil phone No	Signature
1	Abdour Makié Abdi	32	M	farmer	615891111	
2	Daloro Abdiasis Abdouali	40	f	farmer	617042592	
3	Khadija Bagdad Pasim	55	f	farmer	616150394	
4	Mourto Tidow Haji	45	f	farmer	618688862	
5	Habibo Shamir Hussein	45	f	farmer	616735106	
6	Ahmed Ibrahim Omer	40	M	farmer	617808983	
7	Muse Omer Muse	30	M	farmer	612766386	
8	Ibrahim Abdouli Ali	55	M	farmer	613685197	
9	Ibrahim Hassan Shine	60	M	farmer	615748876	
10	Tahil Omer Adow	40	M	farmer	615996903	
11	Agnate Ali Nur	35	M	farmer	615089770	
12	Abdirahman Dahir Mohamed	57	M	farmer	615622777	
13	Pijow Mawlin Tamara	60	f	farmer	61592306	
14	Ali Aden Ali	19	M	farmer	611518516	
15	Adnan Abdiasis Hassan	22	M	farmer	612236089	Adnan
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						

Annex 5: Community Consultation photos



Annex 6: Land ownership documents



Land ownership.pdf

Annex 7: Chance Find Procedure (CFP)

(In compliance with World Bank ESS8: Cultural Heritage)

Purpose

This procedure provides a framework for managing chance finds — tangible cultural heritage such as artifacts, structures, fossils, or human remains — discovered accidentally during project implementation. The objective is to ensure such discoveries are appropriately handled, recorded, and preserved in accordance with national laws and World Bank Environmental and Social Standard (ESS8).

Scope

This procedure applies to all construction, excavation, and rehabilitation activities under the **Ali Daahir Primary Canal** and any associated subprojects financed by the **Somalia Food Security and Resilience Project (S-FSRP)**.

Definition of a Chance Find

A “chance find” refers to **any unanticipated discovery** of cultural heritage during project implementation, including but not limited to:

- Archaeological objects (e.g., pottery, tools, coins, weapons);
- Historical or religious structures;
- Human remains or burial sites;
- Fossilized materials; or
- Any site or object of cultural, spiritual, or historical significance.

Procedures to Follow in Case of a Chance Find

1. Immediate Suspension of Work

- The contractor **must stop all work immediately** in the area where the find is discovered.
- The site must be secured to prevent damage, theft, or unauthorized access.

2. Notification

- The **Contractor’s Site Supervisor** will promptly inform the **Resident Engineer** and **FAO/MoAI Safeguards Officers**.
- Within **24 hours**, the **District Authority** and **Southwest State Ministry of Culture and Heritage** (or equivalent heritage institution) must be notified.

3. Protection and Documentation

- The contractor will cordon off the discovery site and post a “No Entry” sign.
- The Safeguards team will take photos, GPS coordinates, and brief notes describing the discovery.

4. Evaluation and Decision

- The relevant **Cultural Heritage Authority** or **qualified expert** will assess the significance of the find and determine required actions.
- Possible actions may include:
 - *Removal and preservation* under expert supervision;
 - *Modification of works* to avoid the area; or
 - *No further action* if the find is deemed non-significant.

5. Resumption of Work

- Construction may resume **only after written authorization** from the responsible authority and FAO safeguards team.
- Any measures prescribed by the authority must be implemented before recommencing work.

6. Reporting

- All chance finds and subsequent actions must be recorded in the project’s **Environmental and Social Monitoring Report** and submitted to FAO/S-FSRP Safeguards Management.

Responsibilities

Entity	Responsibilities
---------------	-------------------------

Contractor	Stop work immediately; secure site; notify supervising engineer and safeguards team.
Supervising Engineer / MoAI	Verify the report, coordinate with local authorities, and ensure compliance with the procedure.
FAO Safeguards Team	Liaise with cultural authorities, ensure appropriate handling, and document all actions.
Cultural Heritage Authority (Southwest State)	Evaluate find significance, recommend protection measures, and authorize work resumption.

Non-Compliance

Failure to report or protect a chance find may result in **sanctions, suspension of work, or termination of contract**, as per FAO and MoAI regulations.

Record-Keeping

All documentation related to chance finds — photos, reports, official communications, and decisions — must be retained in the project’s safeguard files and included in **quarterly ESMP monitoring reports**.

Annex 9 : Engineering Designs



Engineering
Designs.zip