



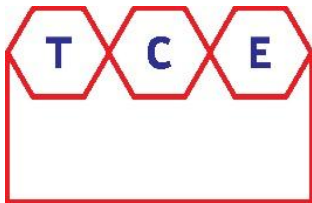
PREPARATION OF GENDER SENSITIVE AND CLIMATE-RESILIENT
CITY WASH MASTERPLANS, MANAGEMENT MODALITIES AND
TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH
GALKAYO, SOMALIA

CONTRACT NO. 43428762

**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT
(ESIA) FOR WATER AND SANITATION SHORT-TERM
INTERVENTIONS FOR PROPOSED CONSTRUCTION OF 2NO.
WATER TREATMENT PLANTS AND WATER STORAGE TANKS IN
BULO BURDE VILLAGE AND DURDUR, SOUTH GALKAYO IN
SOMALIA .**

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SUBMITTED BY



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*IN JOINT
VENTURE*



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LIST OF ABBREVIATIONS

AfDB		African Development Bank
BOD	-	Biological Oxygen Demand
CEDAW		Convention on the Elimination of All Forms of Discrimination against Women
C-ESMP		Construction – Environment and Social Management Plan
CoC		Code of Conduct
ESIRT		Environment and Social Incidence Reporting Toolkit
EHS		Environmental Health and Safety
EIA		Environmental Impact Assessment
ESMP		Environment and Social Management Plan
FAO		Food and Agricultural Organization
FGS		Federal Government of Somalia
GRC		Grievance Redress Committee
GM		Grievance Mechanism
GRM		Grievance Redress Mechanism
IDP		Internally Displaced Person
IFC		International Finance Cooperation
ILO		International Labour Organization
H&S		Health and Safety
NEMA	-	National Environmental Management Authority
MHM		Menstrual Hygiene Management
NGO		Non-Governmental Organization
NO _x		Sulphur Oxides
SO _x		Nitrogen Oxides
SOP		Standard Operating Procedures
SEAH		Sexual Exploitation and Abuse
SEP		Stakeholder Engagement Plan
SH		Sexual Harassment
SWALIM		Somalia Water and Land Information Management
OHS		Occupational, Health and Safety
Pm		Particulate Matter
PPE		Personal Protective Equipment
UNEP		United National Environment Program
TMP		Traffic Management Plan
ToR		Terms of Reference
UNICEF		United Nations Children Fund
WHO		World Health Organization

E.1 Definition pf Terms

Table 0.1: Glossary Summary

Term	Definition
Aquifer	An underground layer of water-bearing permeable rock, rock fractures, or unconsolidated materials (gravel, sand, or silt) from which groundwater can be extracted using a water well or borehole.
Biochemical Oxygen Demand (BOD)	The amount of dissolved oxygen needed by aerobic biological organisms to break down organic material present in water at a specific temperature over a specific time period, typically measured over five days (BOD5).
Borehole	A narrow shaft drilled into the ground, either vertically or horizontally, to access groundwater for water supply purposes. The borehole is typically lined with casing to prevent collapse.
Chlorination	The process of adding chlorine or chlorine compounds to water for disinfection purposes, killing harmful bacteria, viruses, and other microorganisms.
Coagulation	A water treatment process involving the addition of chemicals (coagulants) to remove suspended solids and colloids by causing them to clump together into larger particles (flocs) that can be removed.
Filtration	A physical or chemical water treatment process used to remove suspended solids, particles, and microorganisms by passing water through a porous medium such as sand, gravel, or membrane filters.
Groundwater	Water found underground in the cracks and spaces in soil, sand, and rock, stored in and moving slowly through geologic formations called aquifers.
Head	The pressure or force exerted by water, typically measured in meters or feet, representing the height of a water column that produces a given pressure.
Infiltration	The process by which water on the ground surface enters the soil or the unintended entry of groundwater into sewer or drainage systems through cracks, joints, or defective connections.
Pathogen	A microorganism (bacteria, virus, parasite, or fungus) that can cause disease in humans, animals, or plants, commonly found in contaminated water.
Permeability	The ability of a porous material (such as soil or rock) to allow fluids to pass through it, critical for groundwater flow and septic system functionality.
pH	A measure of the acidity or alkalinity of water on a scale of 0 to 14, where 7 is neutral, values below 7 are acidic, and values above 7 are alkaline.
Potable Water	Water that is safe for human consumption, meeting all applicable health and safety standards for drinking water quality.
Pump Test	A field test conducted on a water well or borehole to determine aquifer characteristics such as yield, drawdown, recovery rate, and sustainable

Term	Definition
	pumping rate.
Reticulation System	The network of pipes, valves, fittings, and appurtenances that distributes treated water from a source or storage facility to individual service connections or distribution points.
Sedimentation	A water or wastewater treatment process in which suspended particles settle out of the water by gravity in a clarification tank or basin.
Submersible Pump	A pump designed to operate while fully submerged in water, typically installed in boreholes or wells to lift water to the surface.
Suspended Solids	Small solid particles that remain in suspension in water or wastewater and do not dissolve, measured as Total Suspended Solids (TSS) in water quality analysis.
Turbidity	A measure of water clarity or cloudiness caused by suspended particles, measured in Nephelometric Turbidity Units (NTU). High turbidity reduces water quality and treatment effectiveness.
Water Quality	The chemical, physical, and biological characteristics of water, typically assessed in relation to its suitability for a particular purpose such as drinking, irrigation, or recreation.
Water Table	The upper surface of the zone of saturation in the ground where soil or rock is permanently saturated with water, representing the level below which groundwater is found.
Water Treatment Plant (WTP)	A facility designed to improve water quality through various physical, chemical, and biological processes to make it suitable for specific uses, particularly for safe drinking water supply.
Yield	The volume of water that can be sustainably extracted from a borehole or well over a specific period, typically measured in liters per second (l/s) or cubic meters per hour (m ³ /hr).

F. EXECUTIVE SUMMARY

F.1 Project Information

The Federal Government of Somalia has applied for funding from the African Water Facility, to help improve adaptability to climate change and create society resilience through the Building Resilience to Climate Change through WASH in South Galkayo, Project. The Project will support immediate key interventions, undertake preparation studies for bankable projects, which will include identification of site-specific climate risks and vulnerabilities, determination of appropriate climate adaptation and mitigation measures including strengthening watershed and WASH management in the targeted towns of Galkayo and its respective peripheral urban poor settlements and villages.

UNICEF Somalia appointed Tertiary Consulting Engineers Ltd in Joint venture with Vital Care Consultancy Limited to carry out the study in six months and come up with bankable investment projects to address the water and sanitation inadequacy in the city of South Galkayo.

The consultant is required to perform a water and sanitation infrastructure and management baseline assessment. In this regard the team shall be required to analyze current water, solid waste, latrine and fecal sludge management/treatment, wastewater and storm water drainage conditions and modality/functionality of the water and sanitation service providers. The Environment and Social Impact Assessment discussed in this report discusses construction and installation of 2No. new water treatment plants in Bulu Burde Village and Durdur area in South Galkayo, Somalia at Global Geographic positions 6° 44.297" N and 47° 27.181" E and 6.738318° and 47.440759° respectively with additional components such as 1No. monitoring lab, and 3No. water storage tanks.

The proposed project will require a total estimated budget cost of 2,127,000 USD which comprises of construction cost of 1,000,000 USD for both WTP, 900,000 USD for water tanks, 127,000 USD for monitoring laboratory and an ESMP implementation cost of 100,000 USD

F.2 Water and Sanitation Short Term Interventions

The scope of works for will comprise of;

- Construction of the water storage tanks, cumulatively up to 3000m³ at the borehole sites and also in identified locations within the town based on the adopted hydraulic models, to ensure all parts of the town receive adequate residual water pressures.
- Construction and installation of 2No. new water treatment plants - Adsorption based- 2000m³/day at the selected borehole sites and also identified location where several boreholes can connect to the treatment sites. (Total Production 4000m³/day from 2 plants).
- Community awareness drives and Public-Private Partnerships strategic plan for management.

- Introduce community-led maintenance plans with user contributions or fee systems, form & train Community Sanitation Committees to oversee shared facilities

F.3 Objectives of ESIA

Reference is made to the African Development Bank adopted an Integrated Safeguards System (ISS) (also referred to as the “2023 ISS”) Environmental and Social Operational Safeguard 1: Assessment and Management of Environmental and Social Risk and Impact. The aim of this overarching Operational Safeguard (OS), together with the other Operational Safeguards (Oss) that complement it, is to mainstream environmental and social (E&S) considerations, including those related to climate change vulnerability. into Bank operations and thereby contribute to sustainable development in the continent. Therefore, the Objectives of the ESIA are aligned to the provisions of relevant environment laws and AfDB OS 1 as summarized below.

- Screen and categorize the project according to the significance of its potential environmental and social impacts, in line with the AfDB’s Operational Safeguard 1 (OS 1) classification system.
- Define the scope of assessment (scoping) to identify key environmental and social issues, areas of influence, and project components requiring detailed study.
- Review existing information on environmental and socio-economic condition of the project area and baseline surveys.
- Review existing legal, institutional and policy framework relevant to the proposed project.
- Identify and evaluate significant potential impacts, both positive and negative of the proposed works.
- Provide appropriate mitigation measures for the management of environmental and social impacts associated with the Project
- Provide a platform for public and stakeholder to provide views, opinions and recommendations with regards to the Project.
- Develop and Environmental and Social Management Plan (ESMP) to guide in decision making and future auditing.
- To assess the relative importance of impacts of the alternative project designs, plans, materials and locations.
- Inform the Project design team on key Project components that require amendments or review in order the comply to safeguards provisions.
- .

F.4 Legal and Policy Regulatory Instruments

Federal Government of Somalia Legal Provisions

The ESIA made reference to below listed Legal and Policy provisions in Federal Government of Somalia

No.	Legal Provision	Description
1.	Constitution of Somalia (2012)	Establishes the right to a clean and healthy environment (Art. 25) and obligates the state to protect ecosystems, biodiversity, and natural resources (Art. 45).

2.	National Environmental Policy (NEP) (2017)	Aims to promote sustainable development through integrated environmental management, pollution control, and natural resource conservation.
3.	Climate Change Policy (2020)	Provides national direction for climate mitigation and adaptation, focusing on resilience in water, agriculture, health, and energy sectors
4.	National Adaptation Plan (NAP) Framework	Framework for implementing Somalia's adaptation priorities under the Paris Agreement
5.	Environmental Protection and Management Act (2024)	Consolidates environmental protection measures, formalizes EIA and environmental audits, and strengthens enforcement
6.	National Environmental Policy (NEP)	Updated NEP includes climate change, disaster risk reduction, and sustainable resource management.
7.	Environmental and Social Impact Assessment (EIA) and Audit Regulations	Provide detailed procedures for conducting EIAs, audits, public participation, and disclosure
8.	Water Resources Law	Governs sustainable use, allocation, and protection of water resources; prohibits pollution of water sources
9.	Forests and Wildlife Law	Provides for protection of forests, wildlife conservation, and biodiversity management
10.	Fisheries Law (1985)	Regulates exploitation of marine resources, prohibits discharge of pollutants into coastal waters
11.	Environmental Management Bill	Establishes environmental governance institutions, introduces a formal EIA process, and defines penalties for non-compliance

Institutional Framework

No.	Institution	Relevance
1.	Ministry of Environment and Climate Change (MoECC)	National policy oversight on environment, climate change, and safeguards; custodian of the Environmental Protection and Management Act (2024) and EIA regulations.
2.	Ministry of Energy and Water Resources (MoEWR)	Oversees water policy, water quality standards, groundwater/water source protection, and wastewater regulation at national level
3.	Federal Member State Ministries (Galmudug)	Responsible for the implementation and coordination of water resource management and infrastructure development within the region.
4.	UNEP - Environment Program	Providing environmental expertise, coordinating water management, fostering integrated water resource management for resilience against drought and floods, and promoting nature-based solutions.
5.	UNICEF Somalia	Supports WASH programming in schools and health centres; often co-funds or provides technical support in sanitation projects
6.	AfDB	Project financier; requires compliance with 2023 ISS. Provides technical guidance, safeguard screening, and monitoring during project lifecycle

The African Development Bank Integrated Safeguards System (ISS)

In 2013, the African Development Bank adopted an Integrated Safeguards System (ISS) (also referred to as the “2013 ISS”), which established the Bank Group’s commitment to sustainable development, consolidating and building on the Environment (2004) and Involuntary Resettlement (2003) safeguard policies, as well as cross-cutting policies and strategies on gender (Gender Strategy for 2021–2025, “Investing in Africa’s Women to Accelerate Inclusive Growth”), and then the Civil Society Engagement Framework (2012).

The updated ISS improves the consistency of the Bank’s approach to key thematic issues, Environmental and Social Assessment (ESA), and stakeholder engagement activities by adopting 10nr Oss. The 10nr E&S OSs set out the requirements for Borrowers relating to the identification and assessment of E&S risks and impacts associated with operations supported by the Bank.

The ten E&S OSs establish the standards that Borrowers shall meet, as appropriate, in projects, activities, and initiatives supported through Bank financing throughout the life cycle of operations, the OS are summarized on Table E-1 below.

Table F-1: Summary of Operational Safeguards

No	OS	Provisions
1	Operational Safeguard 1	Assessment and Management of Environmental and Social Risk and Impact
2	Operational Safeguard 2	Labour and Working Conditions
3	Environmental and Social Operational Safeguard 3	Resources Efficiency and Pollution Prevention and Management
4	Environmental and Social Operational Safeguard 4	Community Health, Safety and Security
6	Environmental and Social Operational Safeguard 6	Habitat and Biodiversity Conservation, and Sustainable Management of living Natural Resources
7	Environmental and Social Operational Safeguard 7	Vulnerable Groups
10	Environmental and Social Operational Safeguard 10	Stakeholder Engagement and Information Disclosure

F.5 Baseline Setup

South Galkayo town is one of the largest cities in Somalia with an approximate population of 137,000 (International Crisis Group, 2015) which serves as the capital of the north-central Mudug region. It is semi-arid, receiving an average of only about 158mm of rainfall per year. Water sources include berkads (rainwater harvesting), shallow wells, and boreholes. The most reliable source of water is through the deep boreholes, although the water is brackish.

Bulu Burde village however has a population of approximately 16,900 residents. The baseline of the water supply situation in the area, suggests it's a typical rural area

struggling with severe water scarcity and a lack of formal infrastructure. The region area depends on a mix of limited and often unsafe water sources, mirroring the broader challenges facing Somalia's arid regions.

The project area is primarily surrounded by semi-arid vegetation i.e. *Acacia* spp., domesticated animal species such as goats, dogs and cats. It lacks any sensitive environmental ecosystem.

The town relies on ground water for domestic use, livestock, and small-scale farming. Boreholes are generally between 90 meters to 260 meters deep and in some areas can be 400 meters deep. Shallow wells are usually less than 20 meters deep. While yields vary from one aquifer to another, most shallow wells yield between 2.5 and 10 m³/hr., borehole yields are mostly between 5 to 20 m³/hr. (FAO/SWALIM, 2012). However, the water supply cannot meet the demand of the current population, and the quality of water is saline requiring treatment to meet the WHO drinking water standards before distribution.

There are 14 no boreholes provide ground water source for South Galkayo town. The sources of energy for the water abstraction from boreholes are solar, power grid and generator. The boreholes are distributed to various locations in the town. Once the water is abstracted from it collected in the reservoirs, it is then distributed to the consumers through uPVC pipes which are laid along the road reserve. Both Arafat and Durdur Water companies have laid up their independent distribution network.

South Galkayo plays a vital economic role in central and southern Somalia, serving as a regional trade and service hub that connects southern regions, Galmudug State, and neighbouring Ethiopia. The town's economy is driven by a mix of formal and informal activities, with wholesale and retail trade forming a core income source. Shops and markets supply both imported goods—such as foodstuffs, fuel, and household items—and local products, making South Galkayo a major distribution point for surrounding rural areas.

Livestock and livestock products remain a critical economic driver, with Galkayo functioning as a major livestock trading centre that connects producers from rural areas with export routes through ports like Bossaso. The service sector—closely tied to this trade—supports veterinary services, transportation logistics, and export facilitation, creating employment opportunities across the town. Overall, South Galkayo's economy reflects a dynamic mix of trade, services, and remittance-fuelled entrepreneurship, which are vital to both urban livelihoods and rural-urban linkages.

Charcoal, used by wealthier households, and fuelwood, used by poorer households, restaurants and bakeries, provide most of the energy for cooking in Galkayo town.

Unplanned urban development has led to deforestation for charcoal/fuelwood production, unsanitary living conditions (lack of sewage treatment and proper waste disposal) and possible overexploitation of water resources.

The current climate variability of Somalia is that the amount of rainfall received across the country varies dramatically in time and space, from drought periods to erratic periods of intense downpours and flooding. The prominent observation from analysis of the weather station rainfall data, across all regions and seasons in Somalia, demonstrates a high inter-annual and inter seasonal variation in rainfall is shown to vary between the range of 57 mm and 660 mm at one weather station in central Somalia during a 20-year observation period (UNDP/ICPAC, 2013). Galmudug state, characterized by its hot, arid to semi-arid conditions has seasonal rainfall variations averaging 200mm.

Since 1960s, Somalia has experienced at least one major climate extreme event in each decade (Balint et al 2011). Major floods that have been experienced since 1960 include 1961, 1977, 1981, 1997-98, 2005, 2006 and 2009. Major drought events were experienced in 1969, 1976, 1984, 1987, 1999, 2001, 2004 and 2010. In the past decade (2001 to 2010), the country has been alternating from drought to floods within the years (FAO SWALIM, 2012). The observed pattern (IPCC 2007, 2012) shows increasing variability in rainfall for Somalia suggesting an increase in the frequency and severity of future droughts and flash flood events. Somalia is vulnerable to several natural hazards, including drought and floods, and is projected to be at even greater risk in the future due to climate change. The climate is mainly arid to semi-arid, and Somalia has one of the highest inter-annual variations of rainfall in Africa.

F.6 Stakeholder Consultations

A total of 5 key informant interviews and 6 Focused Group Discussions (FGD) were conducted with representatives from the following sectors between May 29th 2025 – June 4th 2025. Additionally, Public participation forums were held from 3rd to 4th September 2025 at the Five Star Hall Galkayo South.

Table F-2: Key Informant Interviews

Institution / Stakeholder	Date	Key Issues Discussed
Ministry of Women and Human Rights Development (MoWHRD) – Galmudug	May 31 st 2025	Gender gaps in WASH policies, GBV referral pathways, FGM prevalence, and MHM needs
Ministry of Water and Energy – South Galkayo Office	May 30 th 2025	Access to safe water, community water management, challenges in IDP settlements
Galkayo Local Authority (Municipal Office)	May 29 th	Urban sanitation, solid waste management, and community infrastructure needs

Institution / Stakeholder	Date	Key Issues Discussed
	2025	
Ministry of Health – Galkayo Hospital	June 4 th 2025	Public health and hygiene, links between WASH and maternal/child health
Representatives from Local NGOs (e.g., CISP)	June 4 th 2025	Women's participation in service delivery, local, GBV issues, WASH interventions, community outreach

Table F-3: Focus Group Discussions

Group Type	Date	Location	Key Issues Raised
Women-headed households (IDP camp)	June 1 st 2025	Hayaan Bacaadweyne Camp	Long distances to water points, lack of latrines, MHM challenges, security concerns
Adolescent girls (ages 13–18)	May 31 st 2025	Hayaan Bacaadweyne Camp	Lack of MHM materials, school attendance issues, privacy in sanitation facilities
Men (local leaders & elders)	May 30 th 2025	Town Center	Community roles in infrastructure, traditional norms, support for water systems
Female youth (ages 18–30)	May 31 st 2025	Town Center	Vocational needs, participation in water committees, menstrual stigma
	June 2 nd 2025	South Galkayo Market	Livelihood challenges, involvement in hygiene promotion, water source maintenance
Women entrepreneurs	June 2 nd 2025	South Galkayo Market	Access to microfinance, sanitation in market areas, female business participation

Table F-4: Public Forums on 3rd to 4th September, 2025 at Five Star Hall

#	Issue	Mitigation
1	Some of the proposed site locations might be unsuitable due to close proximity to critical social infrastructure (health center, mosque, residential homes) and newly established vulnerable IDP households.	To relocate current health centre, IDPs settlement and stop town growing towards this direction or to assign another location for this project or redesign the project.
2	Despite the positive outcomes, the project may generate environmental and social risks. These include vegetation loss, soil degradation, and potential overuse or pollution of water resources.	To minimize risks, environmental impact assessment (EIA) recommendations and environmental management plans (EMPs) must be implemented
3	A labor influx management plan and community awareness programs on health, gender, and education are recommended.	Local labor should be prioritized, and contractors must follow fair labor standards
4	Health and safety risks can be mitigated by	Continuous monitoring and evaluation (M&E)

	enforcing occupational safety standards, providing personal protective equipment (PPE), training workers regularly, and monitoring pollution levels with appropriate dust and noise control measures.	will allow timely corrective actions, while a grievance redress mechanism will ensure community concerns are addressed. Alignment with Somalia's National Environmental Policy (2020) will further strengthen transparency, inclusivity, and sustainability in project implementation.
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F.7 Project Positive Impacts

	Positive Impacts
Phase	
Construction	• Employment Creation: At construction stage workers will be deployed to help in construction and land preparation activities. This will include both skilled and unskilled personnel especially from the local population. The estimated job opportunities will range from 180 – 280 with 60-70% of workforce occupied by unskilled personnel and 30-40% occupied by skilled personnel. • Income/Revenue to Government: Income to government will be realized in terms of taxes generated during the acquisition of relevant statutory licenses which include but are not limited to Water Services License, EIA License, Business permit, Operators permit among others. Materials to be used during construction will also be taxable through revenues generated, the government will be capable of financing its responsibility to her citizens. • Income to Other Businesses: During implementation of the project, there will be need for transporters, suppliers of raw materials and other service providers, who will benefit from the proposed development
Operational	• Reduced groundwater overuse - Efficient treatment allows safe use of surface water or harvested rainwater, easing pressure on boreholes. • Pollution control - Prevents untreated or contaminated water from entering distribution, reducing environmental contamination. • Support for climate resilience - Reliable treated water supply helps communities cope with droughts and seasonal water scarcity. • Safe drinking water - Removal of pathogens, sediments, and chemicals reduces waterborne diseases (cholera, diarrhoea, typhoid). • Improved hygiene - Reliable supply encourages handwashing, sanitation, and food safety. • Lower child mortality and malnutrition - Healthier water reduces illness that contributes to undernutrition in children. • Job creation - Plant operations employ engineers, technicians, operators, and maintenance workers. • Capacity building - Local staff gain technical training in water quality monitoring and plant management

F.8 Construction Phase Negative Impacts

A summary of negative Impacts anticipated during construction stage and respective ranking are detailed in the table below.

Table F-5: Construction Stage Negative Impacts Ranking

Impact Area	Negative Impact	Ranking	Mitigation Measures
Water Resources	Risk of surface/groundwater contamination from spills, construction runoff, or improper waste disposal	High	Bund storage areas, proper containment, designated waste disposal sites
Soil Resources	Excavation and compaction leading to erosion and soil degradation	Medium	Controlled excavation, backfilling, soil stabilization, revegetation
Air Quality	Dust and emissions from excavation, trucks, and machinery	Medium	Water sprinkling, covering stockpiles, maintain equipment to reduce exhaust
Noise & Vibration	Disturbance to nearby communities and institutions	High	Limit works to daytime, use silencers, notify stakeholders in advance
Flora	Loss of vegetation during site clearance	Low	Minimize clearing, replant disturbed areas, preserve mature trees where possible
Solid & Liquid Waste	Generation of construction debris, packaging, oils, and wastewater	High	Waste segregation, recycling, proper disposal in designated facilities
Traffic & Safety	Risk of accidents from increased heavy vehicle movement	High	Traffic management plan, signage, speed control, community awareness

F.9 Operation Phase Negative Impacts

Water Treatment Plant Installation

The most significant challenges currently facing water treatment plants are aging infrastructure, increasing demand for potable water, maintaining potable water quality, weakened infrastructure as a result of system inefficiencies, Microbial Growth, Biofilms and Sediments, Disinfectants and Disinfection Byproducts, Nitrification, Corrosion, Permeation and Leaching and Water Losses and Main Breaks which will be addressed by the Water and Sanitation department at the operation stage of the Project.

Table F-6: Operational Stage Negative Impacts Ranking

Impact Area	Negative Impact	Ranking	Mitigation Measures
Water Resources	Contamination of ground water.	High	Regular water quality monitoring.
Soil Resources	Potential contamination from chemical leaks or spills	Medium	Secondary containment for chemicals, spill response plan, regular inspections
Noise	Noise from pumps, blowers, and lab equipment	Low-Medium	Acoustic insulation, regular maintenance, restrict operations to acceptable noise limits

Solid Waste	Generation of sludge, spent filters, broken glassware, and lab consumables	High	Segregation, safe disposal of hazardous lab waste, reuse/recycling where possible
Chemical Handling & Safety	exposure to chlorine, acids, and reagents by workers	High	Safety training, PPE, emergency response systems, proper chemical storage
Public Safety	Unauthorized access to treatment plant or lab posing hazards	Medium	Secure fencing, signage, restricted access policies, trained security personnel

F.10 Findings and Recommendations

The AfDB has an ISS that includes Operational Safeguards (OS), and Environmental and Social Procedures (ESAP) used for risk assessment and classification. This particular proposed project is under category 2.

Assessment Recommendations:

- The Bid documents prepared for the Project incorporate the Environment, Social Health and Safety Provisions discussed under Chapter 7 of this report (Environment and Social Impact Assessment and Mitigation Measures).
- The contractors through the support of ESHS officer will ensure that all workers sign Code of Conduct (CoC) before site deployment
- The supervising and contractor will undertake training of personnel on Environment, Social, Health and Safety matters tailored to the Project Scope prior to commencement of works
- The contractor will through the ESHS officer apply the provision of Environment and Social Management Toolkit (ESIRT) in management of incidences and accident's during project implementation stage
- The contractor will prepare monthly and quarterly reports on status of implementation of Environment and social compliance measures discussed in this report.
- Contractor will be required to commit to implementing the Environment, Social Health and Safety (ESHS) Provisions by (ii) Hiring ESHS officers, (ii) Developing site specific (C-ESHS) and Sub Plans listed under Table 7-1 and (iii) Implement Provisions of the Plans and Undertake Monthly and Quarterly reporting of ESHS compliance.

1. BACKGROUND INFORMATION

1.1 Project Information

South Galkayo, located in the Mudug region of Somalia and serving as a major urban center in Galmudug State, is experiencing rapid urbanization driven by rural-urban migration, internal displacement due to conflict and climate shocks, and natural population growth. Over the past decade, this growth has strained the town's limited infrastructure, especially its water, sanitation, and hygiene (WASH) services. The town's sanitation challenges are compounded by its arid climate, limited government capacity, and recurring episodes of drought and conflict that continue to displace populations from surrounding rural areas.

The majority of South Galkayo residents rely on on-site sanitation solutions, primarily traditional pit latrines and unlined or poorly constructed septic tanks, many of which are located in high-density and flood-prone areas. These facilities are often inadequate, unsafe, and unhygienic, leading to frequent overflows, groundwater contamination, and the spread of disease. The situation is particularly dire in informal settlements and IDP camps, where poor access to desludging services and waste management exacerbates the risk of public health crises.

With a population exceeding 100,000, including more than 14,000 IDPs, (as of 2023 and early 2024) South Galkayo's existing water and sanitation systems are overwhelmed. Water supply remains irregular and expensive, disproportionately affecting vulnerable groups such as women and children, who often bear the burden of water collection. Sanitation services are equally deficient, especially in schools, health facilities, and informal settlements, where sharing of basic toilets is common. Fecal sludge management (FSM) is non-functional, and there is no city-wide sanitation strategy or reliable infrastructure to support future growth.

The Terms of Reference (ToR) for this project stress the urgent need to develop climate-resilient, scalable, and context-appropriate sanitation solutions for South Galkayo. This includes decentralized wastewater treatment systems (DEWATS), fecal sludge treatment plants (FSTPs), and resilient on-site sanitation options, particularly for high-risk, flood-prone, and informal settlements. The sanitation master plan must also integrate land use, population projections, and infrastructure planning while promoting community engagement and institutional coordination. To address these gaps, the Federal Government of Somalia – with support from the African Water Facility – is implementing the “Building Resilience to Climate Change through WASH in South Galkayo” project.

1.2 The Project Location

South Galkayo is located in the southern part of Galkayo City, within the Mudug region of Somalia's Galmudug State. The town lies within the catchment of several seasonal drainage channels that flow from the surrounding semi-arid plateaus during the Gu (April–June) and Deyr (October–December) rainy seasons. These ephemeral waterways, commonly known as "Toggas", temporarily carry stormwater runoff, often resulting in localized flooding in low-lying neighbourhoods. While these seasonal rivers remain dry for much of the year, their impact during

The location of the town is as presented in the figure below in the Federal Republic of Somali.

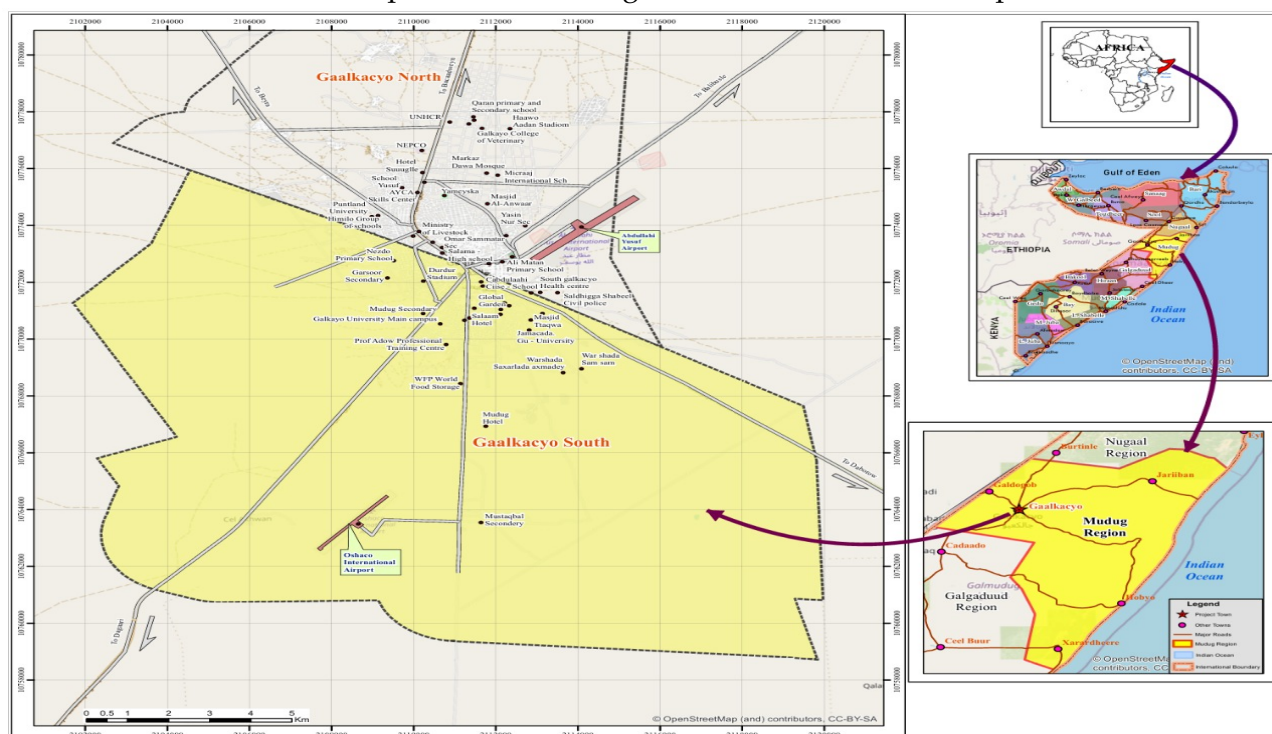


Figure 1-1: Study Area of South Galkayo

The Town of South Galkayo is as presented in the figure below;



Figure 1-2: Layout of Proposed project site
Source: Google Earth

Galkayo is located in the north-central part of Somalia, and is the capital of Mudug region, which connects the Northern and Southern parts of the country. Also, the town is located at an intersection crossroad area, which makes South Galkayo a thriving trade town. Goods from the Bosaso port in the north-east, Berbera in the north-west, agricultural products from the south and livestock from Ethiopia all find their way and exchange hands in Galkayo. The distance from Galkayo to Somalia's Capital City of Mogadishu is approximately 721 km and it is 229km from Garowe, Puntland state of Somalia. Its Global Positioning System is 6° 47' 14.1828" N and 47° 26' 21.2496" E.

The proposed water treatment plant 1 will be located in Bulo Burde Village in the Hiran Region of the North Central Part of Somalia in Galkayo. Its Global Geographic position is 6° 44.297" N and 47° 27.181" E at an elevation 286m.

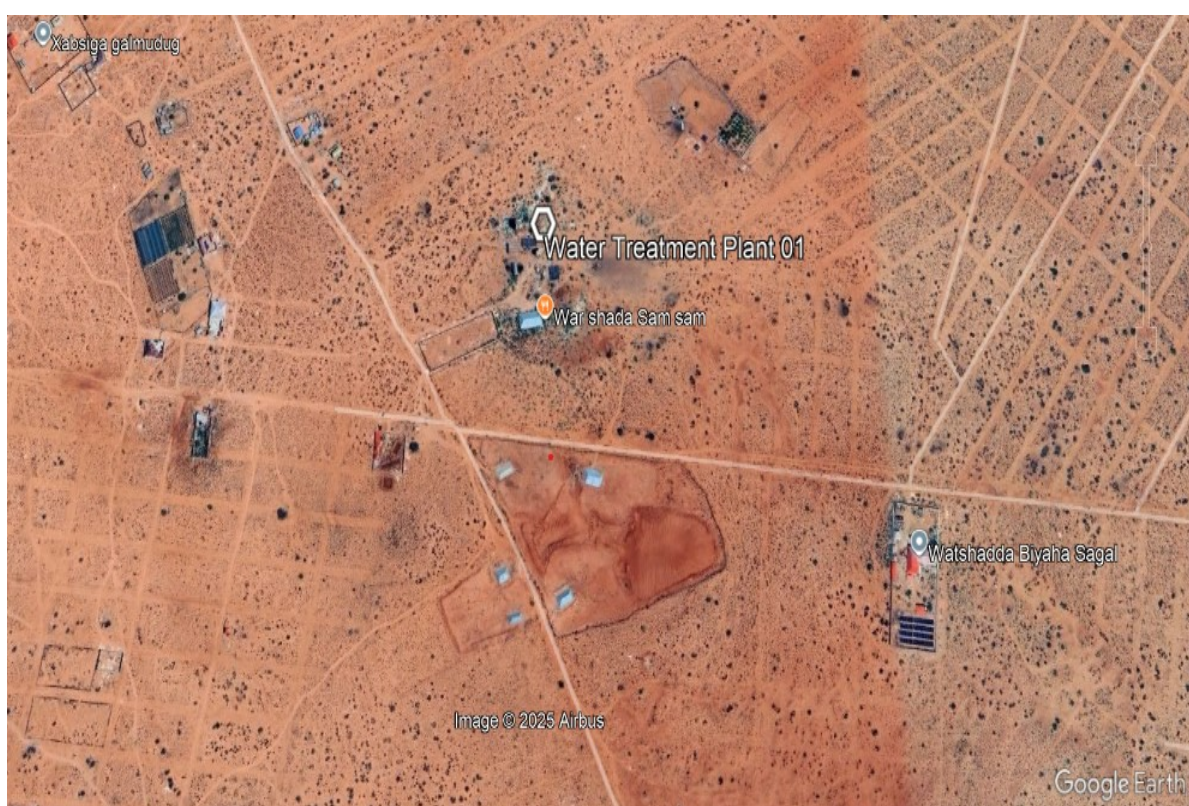


Figure 1-3; Photograph illustrating the location of Water Treatment No. 1
Source: Google Earth

The proposed construction and installation of water treatment plant 2 and a water monitoring lab will be located in Durdur area in South Galkayo, Somalia. Its Global Geographic position is 6.738318° and 47.440759° as presented in the figure below;



Figure 1-4: Location of Water Treatment Plant No. 2.
Source: Google Earth

1.3 Local Administration

Galkayo is a major city in central Somalia and is divided into two administrative zones: North Galkayo, administered by Puntland, and South Galkayo, which serves as a key district under the Galmudug State in Somalia's federal system. South Galkayo is the administrative capital of the Mudug region within Galmudug and plays a central role in the region's governance and service delivery. The town's administration is led by a local council and a mayor, who are responsible for overseeing essential public services including sanitation, water supply, health, and urban development. The implementation of decentralization reforms and democratization efforts, such as local elections, has further shaped governance in the area.

South Galkayo has a diverse and densely settled population, made up of multiple Somali clan groups, with major representation from the Hawiye clan family, particularly the Sa'ad sub-clan of Habar Gidir. Population estimates are critical for effective planning, especially in managing urban expansion, internal displacement, and resource allocation. The presence of both permanent residents and a large number of internally displaced persons (IDPs) at Haar Haar, Calanely and Hawlwadaag IDP camps due to recurrent droughts and conflict has significantly increased pressure on basic services, particularly in informal settlements. This dynamic population landscape highlights the need for inclusive, data-driven urban governance and sustainable infrastructure development.

1.4 Objectives of ESIA

Reference is made to the African Development Bank adopted an Integrated Safeguards System (ISS) (also referred to as the "2023 ISS") Environmental and Social Operational Safeguard 1:

Assessment and Management of Environmental and Social Risk and Impact. The aim of this overarching Operational Safeguard (OS), together with the other Operational Safeguards (Oss) that complement it, is to mainstream environmental and social (E&S) considerations, including those related to climate change vulnerability. into Bank operations and thereby contribute to sustainable development in the continent. Therefore, the Objectives of the ESIA are aligned to the provisions of relevant environmental laws of FSG and AfDB OS 1 as summarized below.

- Screen and categorize the project according to the significance of its potential environmental and social impacts, in line with the AfDB's Operational Safeguard 1 (OS 1) classification system.
- Define the scope of assessment (scoping) to identify key environmental and social issues, areas of influence, and project components requiring detailed study.
- Review existing information on environmental and socio-economic condition of the project area and baseline surveys.
- Review existing legal, institutional and policy framework relevant to the proposed project.
- Identify and evaluate significant potential impacts, both positive and negative of the proposed works.
- Provide appropriate mitigation measures for the management of environmental and social impacts associated with the Project
- Provide a platform for public and stakeholder to provide views, opinions and recommendations with regards to the Project.
- Develop and Environmental and Social Management Plan (ESMP) to guide in decision making and future auditing.
- To assess the relative importance of impacts of the alternative project designs, plans, materials and locations.
- Inform the Project design team on key Project components that require amendments or review in order the comply to safeguards provisions.
- .

1.5 Assessment Methodology

The assessment was guided by Good International Industry Practice (GIIP) guide on preparation of Environmental and Social Impacts assessments as presented in **figure 1.4** below.

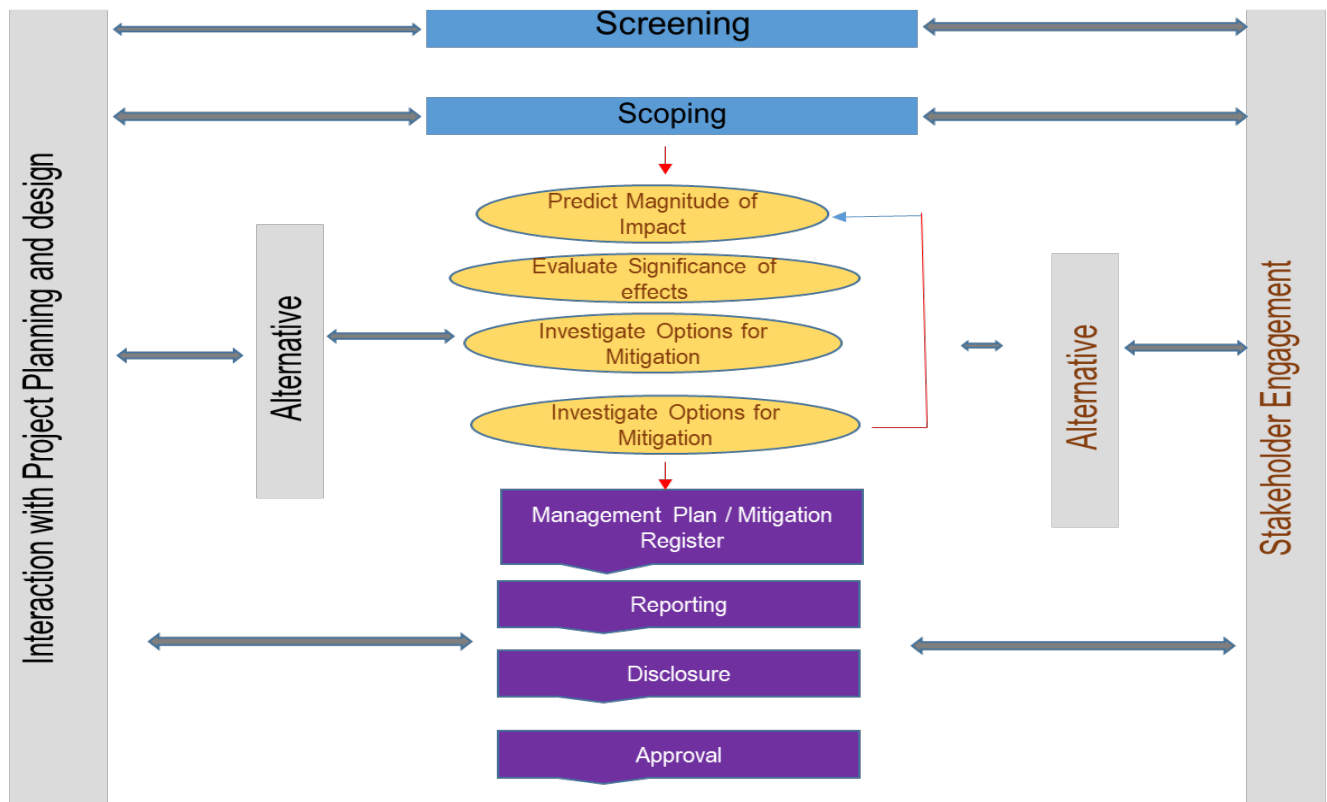


Figure 1-5: Impact Assessment Process

1.5.1 Initial Screening and Baseline Assessment

To provide a context within which the impacts of the Project can be assessed, a team of environmentalists undertook a site visit within the months of May and June, 2025 along the proposed water treatment plant sites using the Project KML files. The purpose of the visit was to identify bio physical and socio-economic data and receptors. The focus was to understand the baseline setup of flora and fauna, water resources, soils, land use and landscape as well as secondary literature review.

1.5.2 Stakeholder Engagement

Stakeholder engagements inform of community meetings, Key Informant Interviews (KII) and Focused Group Discussions (FGD) were conducted during the ESIA process to inform project stakeholders of the proposed project and explain the likely impacts, both positive and negative, during the project life cycle. Stakeholder Identification and analysis was done in close liaison with the local administration with Galkayo Town. Detailed Stakeholder Consultation process is presented separately under chapter 5 of this report.

1.5.3 Impact Assessment Methodology

Impact identification and assessment starts with scoping and continues through a structured impact assessment process. The principal steps followed are summarized in **Table 1-1** above and comprises the below listed steps.

Table 1-1: Summary of Principal step of an Impact Assessment

Steps	Descriptions
Step 1 -	This step involves identifying and forecasting the potential environmental and

Impact Prediction	social impacts that could result from the proposed Project and its related activities. Environmental resources likely to be impacted may include air, water, soil and biodiversity while social receptors include land use, business disruptions, and vulnerable groups
Step 2 - Impact evaluation	Once potential impacts are identified, they are assessed to determine their overall significance. This evaluation considers, the magnitude of the impacts, the sensitivity and values of the affected environmental or social receptors.
Step 3 Mitigation and enhancement	Appropriate measures are proposed to address the impacts identified. For negative impacts, mitigation measures are designed to avoid, minimize, reduce or compensate for the adverse effects on the environment and communities. As for positive impacts, enhancements measures are developed to strengthen the beneficial outcomes
Step 4 Residual impact evaluation	This final step involves reassessing the significance of impacts after applying the proposed mitigation and enhancement measures. It helps in determining residual impacts that would remain even with effective implementation of the measures. This evaluation is essential in analysing the sustainability of the proposed mitigation measures and in making informed decision making including the need for additional safeguards

Step 1 - **Impact prediction -**

-

-

-

- **Residual impact evaluation -**

1.5.4 Impact Evaluation Methodology

Impact evaluation is a structured and detailed assessment process used to determine the significance of the identified impacts in Step 1. This process involves key steps, commencing with the characterization of each potential impact and finalising with an overall significance rating. The process is outlined below.

Characterizing Impact Attribute.

The terminology used to describe impact characteristics is shown in the table below

Table 1-2: Impact characteristics

Characteristic	Definition	Designation
Type	A Descriptor indicating the relationship of the impact to the Project (in terms of cause and effect	Direct, Indirect, Induced
Extent	The 'reach' of the impact (e.g., confined to a small area around the Project Footprint, Projected for several km etc.)	Local, Regional, International
Duration	The time period over which a resource/ receptor is affected	Temporary, Short term, long termPermanent
Scale	The size of the impact (e.g., the size of the area damaged or impacted, the fraction of a resource	No fixed designation, intended to be a numerical value or a

Frequency	that is lost or affected, etc.) A measure of the constancy or periodicity of the impact	qualitative description of intensity No fixed designation, intended to be a numerical value or a qualitative description
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2. Impact Type Definitions

The type of impact is further defined as follows in the table below

Table 1-3: Impact Type Definitions

Definition	Designation
Direct	Impacts that result from a direct interaction between the Project and a resource/receptor (e.g., between occupation of a plot of land and the habitats which are affected)
Indirect	Impacts that follow on from the direct interactions between the Project and its environment as a result of subsequent interactions within the environment (e.g., viability of a species population resulting from loss of part of a habitat as a result of the Project occupying a plot of land).
Induced	Impacts that result from other activities (which are not part of the Project) that happen as a consequence of the Project (e.g., influx of camp followers resulting from the importation of a large Project workforce).

3. Unplanned Events and Likelihoods

For unplanned events such as accidental spills or equipment failures, an attribute described as likelihood is assessed. This refers to the probability of an event occurring during the Projects lifecycle under normal operating conditions. The likelihood of an unplanned event occurring is designated using a qualitative scale, as described in the table below

Table 1-4: Definition of Likelihood

Likelihood	Definition
Unlikely	The event is unlikely but may occur at some time during normal operating conditions
Possible	The event is likely to occur at some time during normal operating conditions.
Induced	Impacts that result from other activities (which are not part of the Project) that happen as a consequence of the Project (e.g., influx of camp followers resulting from the importation of a large Project workforce).
Likely	The event will occur at normal operating conditions (i.e., it is essentially inevitable).

4. Assigning Magnitudes.

Once an impact's characteristics are defined, each impact is assigned a magnitude which is a measure of the severity of the impact on the resource or receptor. Magnitude is a function of a combination of the following impact characteristics:

- Extent
- Duration
- Scale
- Frequency

The magnitude designations themselves are universally consistent, but the descriptions for these designations vary on a resource/receptor-specific basis. The universal magnitude designations are:

- Positive
- Negligible
- Small
- Medium

- Large

In the case of a positive impact, no magnitude designation (aside from 'positive') is assigned. It is considered sufficient for the purpose of the area of influence to indicate that the Project is expected to result in a positive impact, without characterizing the exact degree of positive change likely to occur.

In the case of impacts resulting from unplanned events, the same resource/receptor-specific approach to concluding a magnitude designation is utilized, but the 'likelihood' factor is considered, together with the other impact characteristics, when assigning a magnitude designation.

5. Evaluating Sensitivity, Vulnerability and Importance

Parallel to magnitude, the sensitivity, vulnerability and importance of each affected resource or receptor are assessed. These terms collectively describe how susceptible the receptor/resource is to be impacted. Considerations may include legal protection, government policy, stakeholder views and economic or cultural value.

As in the case of magnitude, the sensitivity/vulnerability/importance designations themselves are universally consistent, but the definitions for these designations vary on a resource/receptor basis. The sensitivity/vulnerability/importance designations used herein for all resources/receptors are:

- Low
- Medium
- High

6. Determining Impact Significance

Once the magnitude of impact and sensitivity/vulnerability/importance of resource/receptor are characterized, the significance was assigned for each impact. Impact significance was designated using the matrix shown in the table below.

Table 1-5: Impact Significance

Magnitude of Impact		Sensitivity / Vulnerability / Importance of Resource / Receptor		
		Low	Medium	High
	Negligible	Negligible	Negligible	Negligible
	Small	Negligible	Minor	Moderate
	Medium	Minor	Moderate	Major
	Large	Moderate	Major	Major

The matrix applies universally to all resources/receptors, and all impacts to these resources/receptors, as the resource/receptor-specific considerations were factored into the assignment of magnitude and sensitivity, vulnerability and importance designations that enter into the matrix.

1.5.5 Mitigation and Enhancement Measures

Further, once the significance of an impact was characterized, the next step was to evaluate what mitigation and enhancement measures are warranted. For the purposes of this assessment, the following order or hierarchy was applied for development of mitigation:

- Avoid at Source, Reduce at Source: avoiding or reducing at source through the design of the Project (e.g., avoiding by siting or re-routing activity away from sensitive areas or reducing by restricting the working area or changing the time of the activity).
- Abate on Site: add something to the design to abate the impact (e.g., pollution control equipment, traffic controls, perimeter screening and landscaping).
- Abate at Receptor: if an impact cannot be abated on-site then control measures can be implemented off-site (e.g., noise barriers to reduce noise impact at a nearby residence or fencing to prevent animals straying onto the site).
- Repair or Remedy: some impacts involve unavoidable damage to a resource (e.g., agricultural land and forestry due to creating access, work camps or materials storage areas) and these impacts can be addressed through repair, restoration or reinstatement measures.
- Compensate in Kind, Compensate Through Other Means: where other mitigation approaches are not possible or fully effective, then compensation for loss, damage and disturbance might be appropriate (e.g., planting to replace damaged vegetation, financial compensation for damaged crops or providing community facilities for loss of fisheries access, recreation and amenity space).

The priority in mitigation for the Project was to first apply mitigation measures to the source of the impact (i.e., to avoid or reduce the magnitude of the impact from the associated Project activity), and then to address the resultant effect to the resource/receptor via abatement or compensatory measures or offsets (i.e., to reduce the significance of the effect once all reasonably practicable mitigations have been applied to reduce the impact magnitude

Residual Impact

In addition, once mitigation and enhancement measures were specified the next step in the Impact Assessment Process was to assign residual impact significance. This is essentially a repeat of the impact assessment steps discussed above, considering the implementation of the proposed mitigation and enhancement measures.

1.5.6 Management and Monitoring and Audit

The final stage in the impact assessment process was the development of a management plan for implementing controls and mitigation and monitoring effectiveness. Monitoring is done to verify that: a) impacts or their associated project components remain in conformance with applicable standards; and b) mitigation measures are effectively addressing impacts and compensatory measures and offsets are reducing effects to the extent predicted. An Environmental and Social Management Plan (ESMP), which is a compilation of all actions identified in the impact assessment, is provided in Chapter 8. This includes mitigation measures, compensatory measures and offsets and management and monitoring activities.

2. PROJECT DESCRIPTION

2.1 Project Location

Water treatment plant 1 is located in Bulu Burde Village in the Hiran Region of the North Central Part of Somalia in Galkayo. Its Global Geographic position is 6° 44.297" N and 47° 27.181" E at an elevation 286m.



Source: Google Earth.

Figure 2-1: Location of Water Treatment plant No. 1.

Water treatment plant 2 and a water monitoring lab will be located in Durdur area in South Galkayo, Somalia. Its Global Geographic position is 6.738318° and 47.440759° as represented in figure below;



Source: Google Earth.

Figure 2-2: Location of Water Treatment plant No. 2.

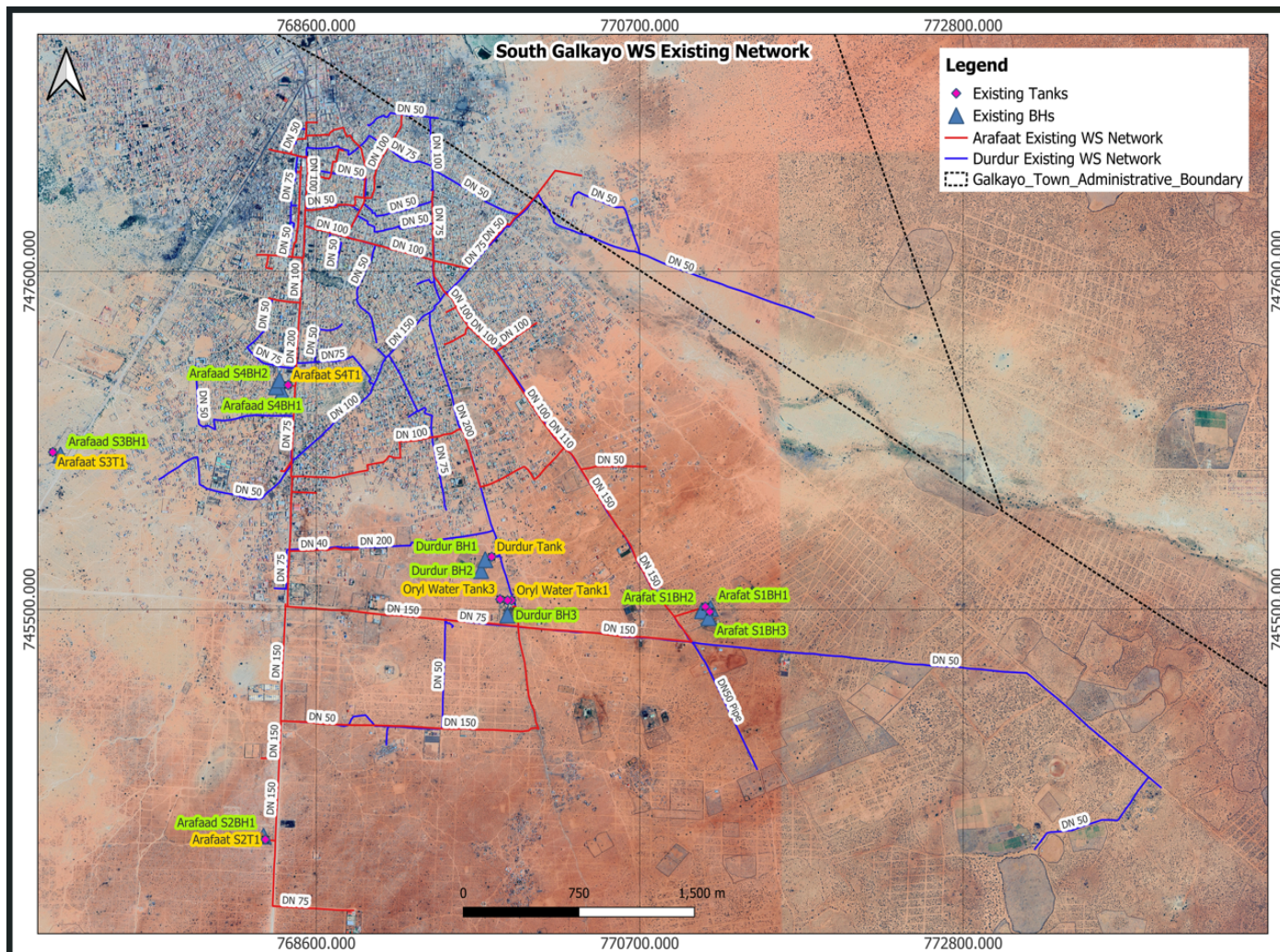


Figure 2-3 :Layout Plan of the Project Area with the Existing and Proposed Water Networks in Galkayo

2.2 Project Design

The proposed Nano-filtration plant will include:

Productive Borehole

- Dedicated to the NF plant to avoid bacterial contamination.
- Submersible pump: **5.5 m³/h (1.4 L/s)** capacity.
- Pressure head: Ground lift + **2.0 bars** for first-stage processing.

Ultra-Filtration (UF) Modules

- Purpose: Pre-treatment to remove impurities before NF.
- Operating pressure: **1.5–2.0 bars**.
- Configuration: Three modules (two operational, one standby).
- Each capacity: **5.5 m³/h (1.4 L/s)**.
- Automatic control for switching and backwashing.

Centrifugal Pumps

- Function: Increase pressure to **7.0 bars** (5.0 bars for NF + 2.0 bars delivery to reservoir).
- Installed for each UF module.

Nano-Filtration Modules

- Three modules (two operational, one standby).
- Each with **5.5 m³/h (1.4 L/s)** capacity.

Ground Reservoir

- Capacity: **50 m³**.
- Base elevation: **751.50 masl** (~30 m above town) for gravity-fed distribution.
- Structure: Reinforced concrete top and bottom slabs; limestone masonry sidewalls (locally sourced)

Plant Infrastructure

- Secured **6 × 6 m building** housing the plant.
- All piping: **Stainless steel**, ensuring durability and hygiene.

2.3 Description of Project Components

The scope of works for will comprise of;

- Construction of the 3No. water storage tanks, cumulatively up to 3000m³ at the borehole sites and also in identified locations within the town based on the adopted hydraulic models, to ensure all parts of the town receive adequate residual water pressures.
- Construction and installation of 2No. new water treatment plants - Adsorption based- 2000m³/day at the selected borehole sites and also identified location where several boreholes can connect to the treatment sites.
- Community awareness drives and Public-Private Partnerships strategic plan for management.

2.4 Proposed Water Treatment Process – South Galkayo

The following treatment train is proposed to ensure raw groundwater extracted from boreholes in South Galkayo meets WHO drinking water standards, with a focus on microbiological safety, turbidity reduction, and chemical contaminant removal (if present):

1. Raw Groundwater Extraction

- Source: Existing borehole(s) in South Galkayo.
- Typical Issues: May contain turbidity, iron, and microbial contamination.
- Action: Groundwater is pumped using submersible or solar-powered pumps into the treatment line.

2. Sand Filtration (Turbidity Removal)

- Purpose: Removes suspended solids, organic matter, and reduces turbidity.
- System: Slow or rapid sand filter unit, possibly dual media (sand + gravel).
- Benefit: Improves water clarity and enhances the effectiveness of subsequent disinfection.

3. Iron Removal (Conditional)

- Trigger: Activated if groundwater testing reveals elevated iron levels (>0.3 mg/L).
- Method: Aeration followed by filtration, or manganese dioxide-coated sand media.
- Benefit: Prevents discoloration, metallic taste, and fouling of downstream systems.

4. Chlorination (Disinfection)

- Purpose: Kills pathogens including bacteria, viruses, and protozoa.
- System: Manual or automated chlorination (liquid chlorine or tablets).
- Monitoring: Regular residual chlorine testing (target: 0.2–0.5 mg/L at point of use).

Benefit: Ensures microbiological safety of water before distribution

Introduce community-led maintenance plans with user contributions or fee systems, form & train Community Sanitation Committees to oversee shared facilities.

2.5 Estimated Project Costs for Galkayo

Based on the adopted unit rates, the cost estimates for the proposed Water Treatment Plant in South Galkayo are summarized in the table 2-2 below

Table 2-1: Estimated Project Costs

No.	Position/Description	Unit	Quantity	Unit Cost (USD)	Total Cost (USD)
1	Construction of the 3No. water storage tanks, cumulatively up to 3000m ³ at the borehole sites and also in identified locations within the town based on the adopted hydraulic models, to ensure all parts of the town receive adequate residual water pressures.	M ³	3000	300	900,000
2	Construction and installation of 2No. new water treatment plants -Adsorption based- 2000m ³ /day at the selected borehole sites and also identified location where several boreholes can connect to the treatment sites. (Total Production 4000m ³ /day from 2 plants)	No.	2	500,000	1,000,000
3	The construction and establishment of a water quality monitoring laboratory, including the supply of equipment's and machines at Durdur	No.	1	127,000	127,000
4	Community awareness drives/ESMP Implementation	Job	1	100,000	100,000
	Total				2,127,000

2.6 Project Phases.

The water treatment plant installation process includes various stages as presented in the table below;

No.	Phase	Description
1.	Planning and Design	• Site selection. • Hydrogeological studies. • Design development • Environmental Impact Assessments
2.	Construction & Commissioning	• Borehole drilling • WTP installation • Pump installation • Equipment testing
3.	Operational	• Continuous water treatment. • Water distribution

		• Routine laboratory water testing • Equipment maintenance
4.	Decommissioning	• Dismantling of WTP • Disposal and/or reuse of materials

2.7 Equipment and Materials Used

- **Water Supply:** Submersible borehole pump.
- **Treatment Equipment:** Ultra-filtration modules, nano-filtration membranes, UV disinfection unit.
- **Mechanical Systems:** Centrifugal pumps, valves, stainless steel piping.
- **Civil Works Materials:** Reinforced concrete (reservoir, slabs), masonry walls, roofing materials.
- **Laboratory Equipment:** pH meters, turbidity meters, salinity/fluoride kits, microbiological testing equipment.

2.8 Waste Streams

- **Liquid Waste:**
 - NF reject brine water (concentrated salts and contaminants) requiring controlled discharge.
 - Backwash water from UF and sand filters.
- **Solid Waste:**
 - Spent filter media (sand, activated carbon).
 - Used NF/UF membranes requiring safe disposal after end of life.
 - Sludge and sediments from pre-treatment processes.
- **Chemical Waste:**
 - Residual disinfectants (chlorine solutions).
 - Laboratory reagents.

3. SITE BASELINE INFORMATION

3.1 Climate

South Galkayo's climate is of arid and semi-arid just like Somalia's terrain consists mainly of arid and semi-arid plateaus, plains, and highlands. Most of the country is flat, rising in the southern and central regions to a few hundred meters above sea level near the Ethiopian border. Somalia's Arid and Semi-Arid Lands (ASALs) make up more than 80 percent of the country's landmass and are characteristically prone to extreme weather conditions, including high mean surface temperature, periods of extended drought, and highly erratic rainfall and strong winds (UNDP/ICPAC, 2013).

The county has an average annual rainfall of about 250 mm. However, there are variations in spatial distributions of rainfall, with about 500 mm recorded annually in the northern highlands and between 300 and 500 mm in the southern regions. The coastal plains register only between 50-150 mm. A few small areas along the coastal strip of Somalia are classified as sub humid. Rainfall in Somalia has great spatial and temporal variability. Seasonal rainfall is dominated by the north and south movement of the Inter-Tropical Convergence Zone (ITCZ), delineated into four seasons:

- Jiilaal: dry season from December to March. The north-east monsoon is in dominance and conditions are generally dry and warm/hot. The northern parts of the country experience some cool and dry air during this season, while the central and southern parts experience very hot conditions.
- i Gu': rainy season starts from April to June. Relatively wet and hot conditions prevail, with Gu' considered as the major rainy season in the country. The southern regions receive more rains than the north. Occasionally, the Gu' season extends into June or July because of the Xagaa rains, which are produced by the onset of the moist onshore winds.
- Xagaa: dry season is from July to September. The south-west monsoon dominates, bringing relatively cool conditions, with showers along the coast, but dry inland.
- Deyr: rainy season is from October to November. The rainfall received in this season is less than that of the Gu' rainy season.

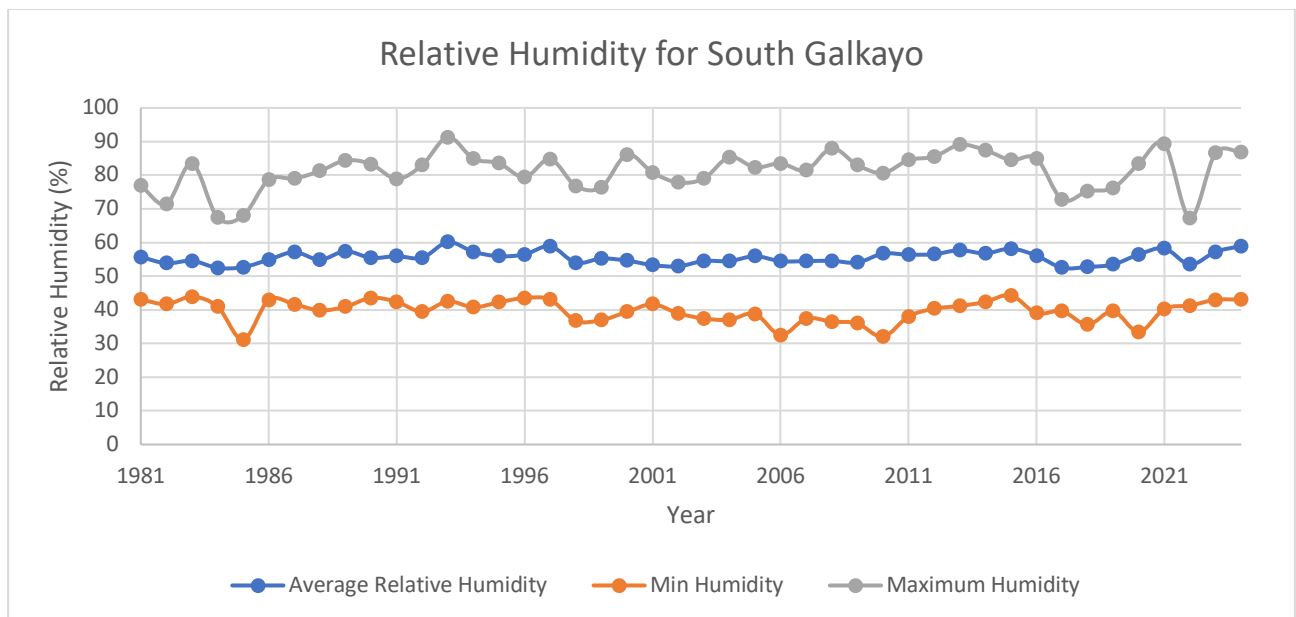


Figure 3-1: Relative Humidity of South Galkayo

The Average high and low temperatures are as presented in the figure below. The months of March and October having the highest average high temperatures.

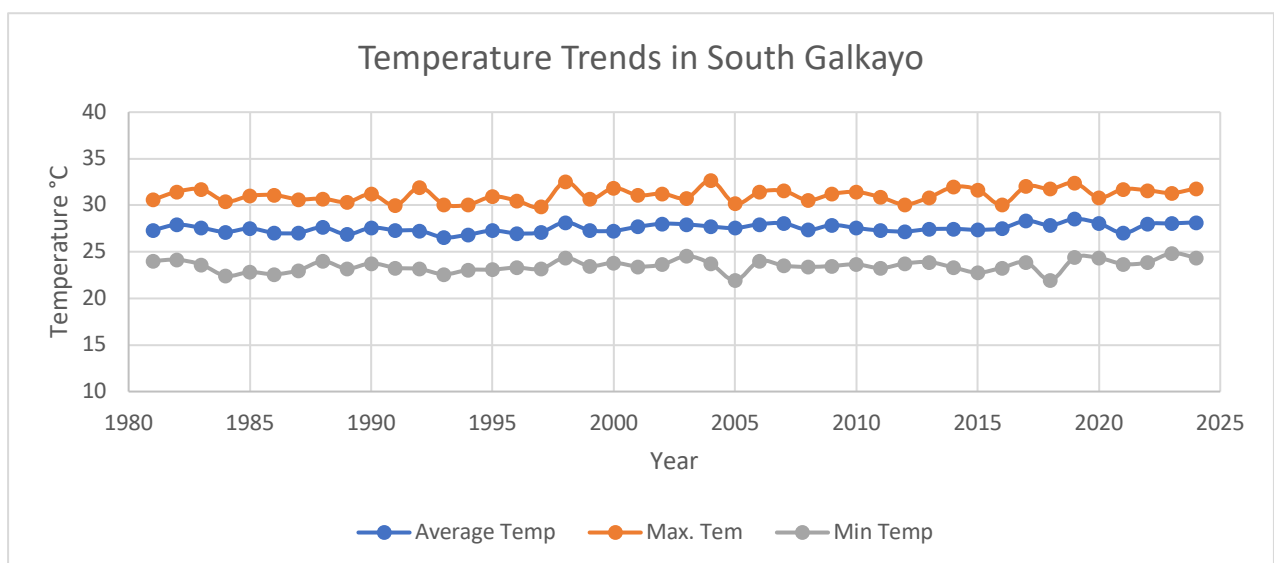


Figure 3.3-2: Average High and Low Temperature in South Galkayo from 1981 - 2024

Source: Google

The figure below shows the annual rainfall patter from 1981 to 2023. The trend shows that 1981 -1985 was the worst dry period while from 2021 rainfall has been at its peak.

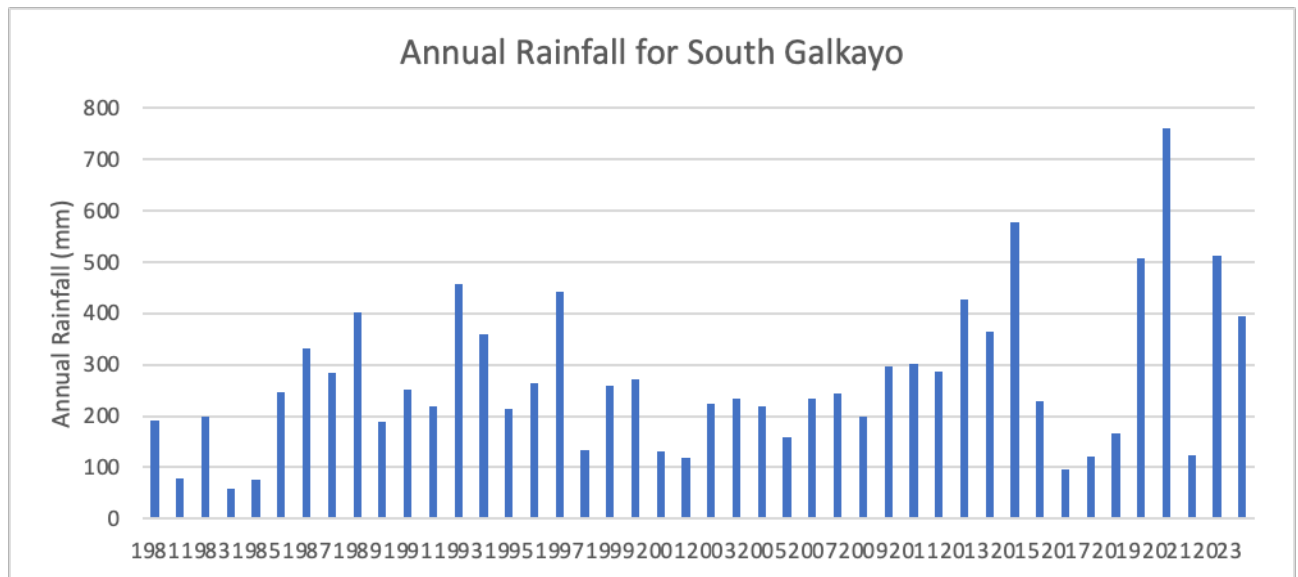


Figure 3-3: Annual rainfall for South Galkayo

3.2 Physical and Topographic Conditions

3.2.1 The Project Town Location

South Galkayo is located in the southern part of Galkayo City, within the Mudug region of Somalia's Galmudug State. The town lies within the catchment of several seasonal drainage channels that flow from the surrounding semi-arid plateaus during the Gu (April-June) and Deyr (October-December) rainy seasons. These ephemeral waterways, commonly known as "Toggas", temporarily carry stormwater runoff, often resulting in localized flooding in low-lying neighbourhoods. While these seasonal rivers remain dry for much of the year, their impact during rainfall events is significant, particularly in informal settlements and flood-prone zones across South Galkayo.

The location of the town is as presented in the figure below in the Federal Republic of Somali.

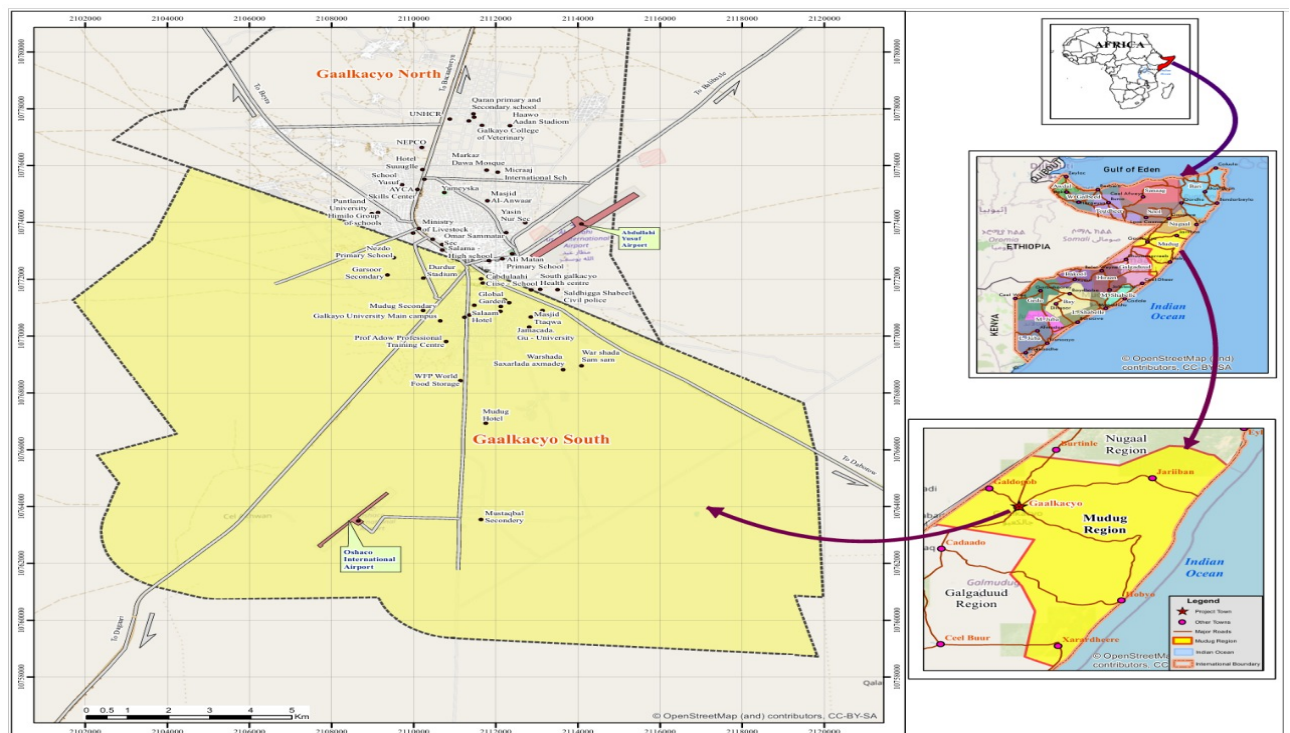


Figure 3-4: Study Area of South Galkayo

The Town of South Galkayo is as presented in the figure below;

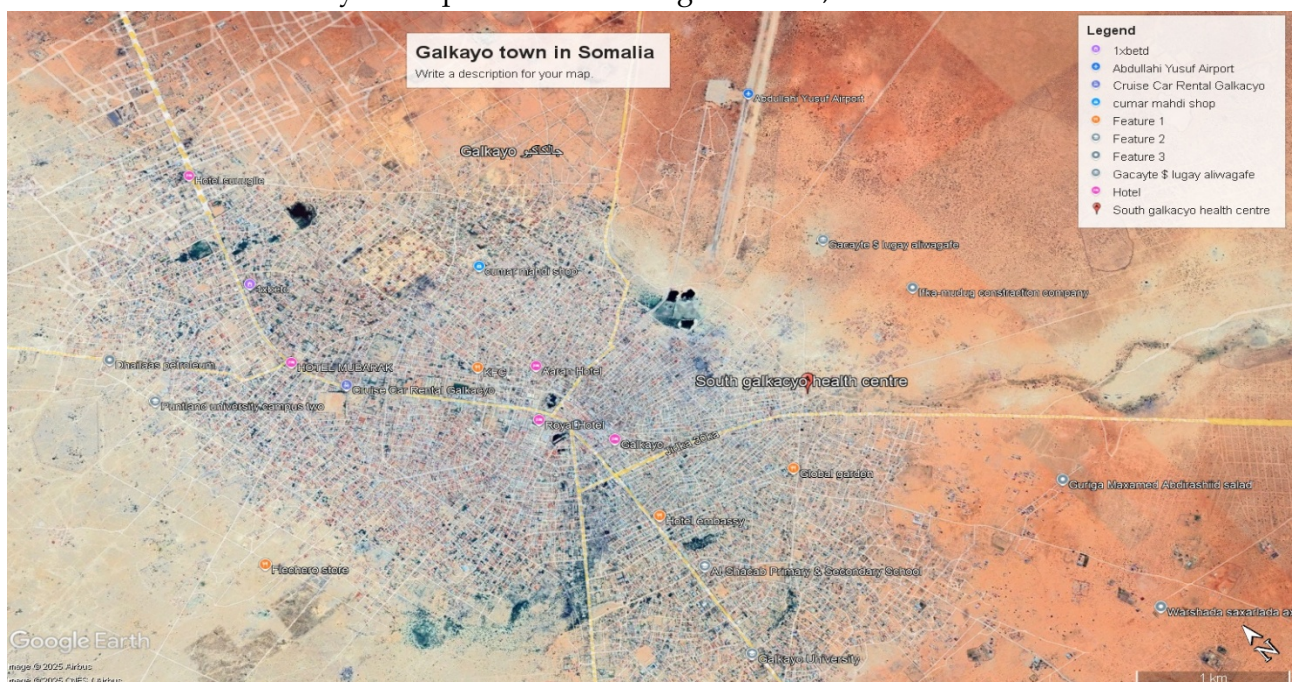
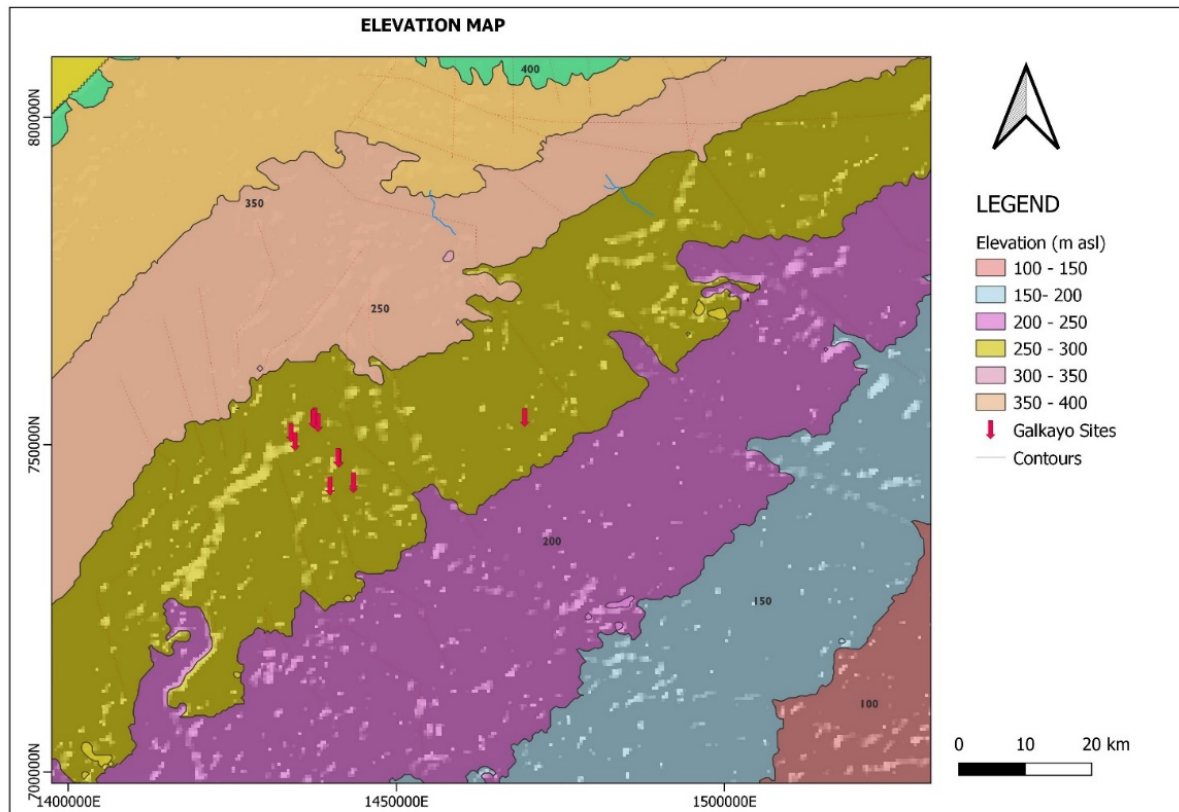


Figure 3-5: Galkayo Town, Galmudug State- Federal Republic of Somalia

Source: Google Earth

3.2.2 Topography and Landscape

The topography of South Galkayo is flat. There is minimal slope and that is why when it rains in the town, water rains where it falls. This causes a lot of flooding for the town. The slope of the town is from the northern side sloping towards the southern part of the town. It brings in a lot of water from the Northern part of the town that is under the control of Puntland state.



3.2.3 Geology and Soils

South Galkayo's soil, in extension to project location, is characterized by generally thin, rocky, and low in fertility. These soils are primarily calcareous, meaning they have a high content of calcium carbonate and gypsum. They have poor water retention capacity, which is a major challenge given the region's sparse and irregular rainfall. Consequently, these soil types are not suitable for extensive rain-fed agriculture but are well-adapted for rangeland and pastoral activities, which form the basis of the local economy.

The geology is characterized by ancient crystalline basement rocks covered by thick layers of sedimentary rock from the Mesozoic and Cenozoic eras. The most significant geological formations are the limestone aquifers from the Eocene period. These limestones are crucial for forming karstic aquifers, which serve as the primary source of groundwater for the wells and springs that are vital for human and animal survival in this arid environment. The region's geological structure has been heavily influenced by the rifting of the Somali and Arabian Plates, which has created the sedimentary basins that hold these critical groundwater resources.

3.3 Biological Baseline Data

3.3.1 Flora:

- The project area is primarily peri-urban with patches of semi-arid vegetation.

- Dominant plant species: *Acacia spp.*, *Commiphora spp.*, drought-resistant shrubs, and scattered grasses.
- Vegetation is mostly disturbed due to urban development, livestock grazing, and human activity.
- Limited presence of trees within institutional compounds (schools, hospitals) which may provide shade but are few.

3.3.2 Fauna:

- Mammals: Small urban-adapted species such as rodents, cats, dogs, and some goats and sheep in peri-urban areas.
- Birds: Urban-adapted species such as pigeons, sparrows, and occasional migratory birds.
- Reptiles & Insects: Lizards, scorpions, and various insects typical of semi-arid urban environments.

3.3.3 Environmental Sensitivity:

- No significant protected areas or endangered species in the immediate project area.
- Wildlife presence is minimal due to the urbanized nature of the site

3.4 Social Baseline Data

3.4.1 Demographic Data:

- Estimated population of South Galkayo town: **137000**, (ICG 2015).
- Population is predominantly ethnic Somali; clan structures influence social organization.
- Vulnerable groups include low-income households, women, children, and IDPs relying on communal water and sanitation facilities.

3.4.2 Land Ownership:

- Land ownership is a combination of state-owned, community-managed, and private land.
- The construction sites are primarily on public or institutionally leased land, reducing risk of displacement.

3.4.3 Administrative Setup:

- South Galkayo is part of the Galmudug Federal Member State.
- **Local Governance:** Ward-level committees and traditional elders who influence community engagement and land-use decisions.
- **WASH Governance:** Community Water and Sanitation Committees (CWSCs) oversee water points and treatment facilities, ensuring equitable access and maintenance.

3.4.4 Infrastructure & Services:

- The town has **basic road networks** connecting key public institutions.

- Water supply is primarily from existing boreholes; sanitation coverage is limited.
- Health and educational institutions rely on community water sources, highlighting the need for improved water provision systems.

3.5 Water Supply Situation

South Galkayo town is one of the largest cities in Somalia, falls within Mudug region which has a land size area of 118,737km² which serves as its capital with a population of approximately 137,000 people.. It is semi-arid, receiving an average of only about 158mm of rainfall per year. Water sources include berkads (rainwater harvesting), shallow wells, and boreholes. The most reliable source of water is through the deep boreholes, although the water is brackish.

3.5.1 Water sources

The town relies on ground water for domestic use, livestock, and small-scale farming. Boreholes are generally between 90 meters to 260 meters deep and in some areas can be 400 meters deep. Shallow wells are usually less than 20 meters deep. While yields vary from one aquifer to another, most shallow wells yield between 2.5 and 10 m³/hr, borehole yields are mostly between 5 to 20 m³/hr (FAO/SWALIM, 2012). However, the water supply cannot meet the demand of the current population, and the quality of water is saline requiring treatment to meet the WHO drinking water standards before distribution. Current available options for water treatment include; conventional ground water treatment and advanced Nano-filtration treatment which would be most suitable.

3.5.2 Power / Energy Sources

The sources of energy for the water abstraction from boreholes are solar, power grid and generator. However, the cost of the power grid and generators is expensive to sustain due to high costs involved. On the other side solar power is cheap despite the initial cost of installation. There are 14 no boreholes provide ground water source for South Galkayo town. The proposed water treatment facility would use national power grid as its main power source and have solar power for back-up.



Figure 3-6: The current power sources for the Water utilities

3.5.3 Water Distribution

The boreholes are distributed to various locations in the town. Once the water is abstracted from it collected in the reservoirs, it is then distributed to the consumers through uPVC pipes which are laid along the road reserve. Both Arafat and Durdur Water companies have laid up their independent distribution network. During the feasibility study the transmission lines were mapped and the lengths of pipe network is as follows;

Table 3-1: Water supply network for South Galkayo

Type of pipes sizes	Arafat WSP Pipe Lengths (m)	Durdur WSP Pipe Lengths (m)
DN 200	3,451	2,807
DN 150	10,244	2,116
DN 110	13,812	5,264
DN 75	9,343	7,041
DN 50	22,298	17,186
Total	59,148	34,411

As indicate in the table above the current pipeline layout for Arafat Water Company is 59kms while the pipeline layout for Durdur Water company is 34kms

3.5.4 Water Storage

For both Arafat water company and Durdur water Company, the borehole sites have concrete overhead tanks for storage of the water before its distribution to the consumers. For South Galkayo, the use of concrete water tanks instead of steel panels was guided by the quality of water which is currently saline. The current capacity of the water storage tanks in South Galkayo is as follows;

Table 3-2: Existing Storage Capacities GSA NGO

Name of the location	Tank size
6°43'19.31"N, 47°25'12.56"E	150m ³

Table 3-3: Existing Storage Capacities XarXar NGO

Name of the location	Tank size
6°44'28.33"N, 47°26'23.67"E	100m ³ , 50m ³

It's noted that additional storage tanks will be required especially within the central business center since there is a huge demand.

3.5.5 Water Treatment

The only water source to secure the water demand of the town is the deep aquifer, which unfortunately produces saline water. Currently there is no treatment provided for the water being supplied to South Galkayo town. The solution to secure drinkable water to the inhabitants is the construction of a desalinization plant and distribution system.

3.5.6 Connections

Each water utility has its own pipe network and has metered connections at the customer's point. Arafat Water Company has 12,000 connections, Durdur Water Company has 4,500 connections, XarXar NGO has connections with XarXar IDP Camp and GSA NGO has connections at the Hospital and Technical college.

3.5.7 Water Kiosks

Water kiosks are only located within the IDP camps and within South Galkayo there are several IDP camps namely Haar Haar, Calanely and Hawlwadaag IDP camps .

3.5.8 Livestock Troughs

Livestock troughs are constructed at every borehole site to cater for the livestock which are kept by the farmers.

3.5.9 Generator Room

At every borehole site a generator room is constructed to house the switches, generator and storage for the fuel.

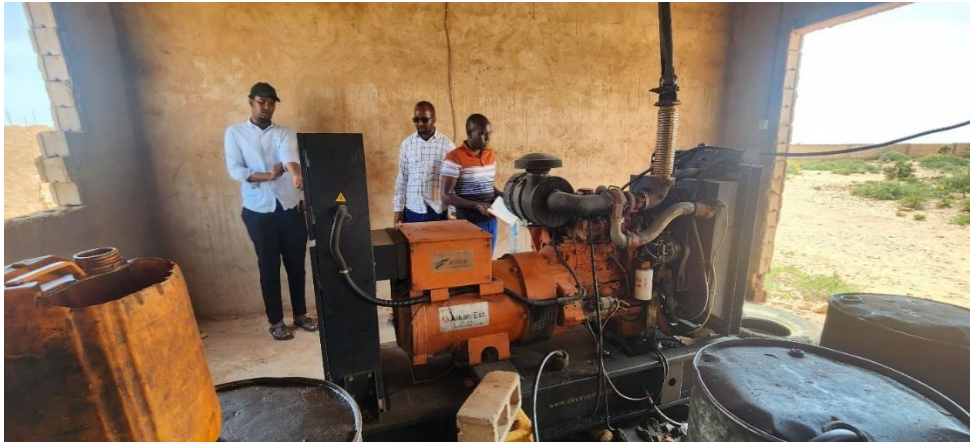


Figure 3-7: Existing Generator room -South Galkayo

3.5.10 Gaps Identified

Through extensive field visits, data collection, stakeholder consultations, and technical analysis, several key gaps in South Galkayo's existing water supply system were identified:

1. Water Supply Deficit
 - The current total production of approximately 5,599 m³/day falls significantly short of the current demand of 9,334.8 m³/day, and even more so against the projected ultimate demand of 16,295.42 m³/day by 2046.
2. Non-Revenue Water (NRW)
 - Both Durdur and Arafat Water Supply Companies report high levels of non-revenue water (approx. 38.43%), mainly due to leaks, illegal connections, and lack of master meters.
3. Water Quality Concerns
 - Elevated levels of salinity, fluoride, total dissolved solids (TDS), and microbial contamination (e.g., E. coli and coliforms) make the water unsafe for direct human consumption without treatment.
4. Inadequate Water Treatment Infrastructure
 - Despite the poor water quality, there is no functional water treatment or desalination plant currently operating in the town.
5. Limited Storage and Distribution Capacity
 - The existing storage infrastructure is insufficient, especially in high-demand areas like the Central Business District (CBD). Some borehole sites lack adequate overhead storage.
6. Poor Network Mapping and Aging Infrastructure
 - Arafat's distribution network is largely unmapped and comprises aging and sometimes blocked pipelines, resulting in low pressures and service interruptions.
7. Energy Sustainability
 - Although solar power is increasingly used, high operational costs persist due to reliance on diesel generators and grid electricity, especially during cloudy periods.
8. Inadequate Institutional and Human Resource Capacity

- The water utilities lack sufficient technical capacity, staff training, and financial resources to efficiently manage O&M, billing, metering, and customer service.
- 9. Inadequate Service Coverage in IDP and Peripheral Areas
 - Several settlements, especially IDP camps and outlying communities, remain underserved or completely unserved.
- 10. Lack of Integrated Planning and Monitoring Tools
 - There is no centralized system for real-time monitoring of production, consumption, quality, or revenue, which limits strategic management.

3.6 Existing water Service Provision

3.6.1 The Ministry of Energy and Water Resources of Galmudug

According to the **World Bank (2022)**, the Galmudug ministry is responsible for formulating and implementing water policies, developing infrastructure, and ensuring sustainable water resource management. It collaborates with international partners, NGOs, and development agencies to enhance water accessibility across urban and rural areas. The Ministry of Energy and Water Resources of Galmudug provides regulatory oversight and support for water resource management. Its functions include:

- **Policy Development:** Establishing regulations and guidelines for water governance across the state.
- **Project Coordination:** Collaborating with humanitarian organizations and development agencies to implement and oversee water supply projects.
- **Capacity Building:** Providing technical and financial support to local water management committees.

3.6.2 Water Supply and Management - Water service providers

Durdur and Arafat Water Companies in South Galkayo District are private water companies. They are mandated to provide safe drinking water and expand water services to all South Galkayo town. They supply water to the population and nomads living in the surroundings of the town and their cattle through operating, managing and connecting the water supply system to the customers of South Galkayo and distributing the waters to the nomads. This entity is responsible for operation and maintenance for water supply systems. Durdur Water Company will be responsible for the water provision after treatment.

There are four water supply systems operating in South Galkayo town (two in the north and two in the south). All four service providers have been established as private companies with assistance from UNICEF and other support agencies. Water reaches users either through individual connections (about 70% of users in South Galkayo and 30% in the south) or through kiosks and wheelbarrow sellers.

3.6.3 Durdur Water Supply Company (DWSC)

The company is a community-based organization (CBO) which was established in 2018 run with four boreholes which collect water to one overhead concrete tank. The map below shows existing infrastructure for Durdur company.

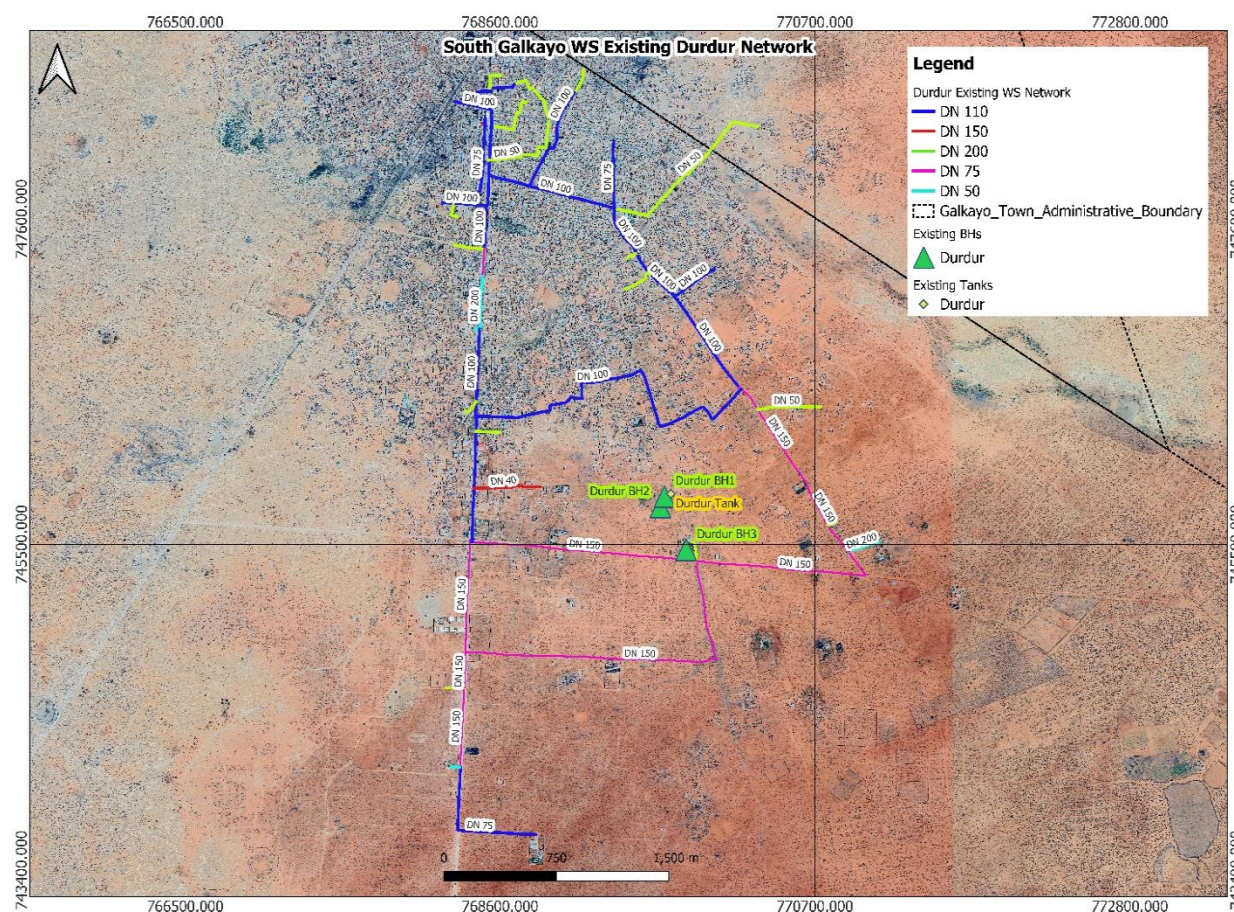


Figure 3-8: South Galkayo's existing water supply infrastructure - Durdur water company

Source of Water

South Galkayo's water is from 2 boreholes as indicated in the table below

Table 3-4: Location of 2 boreholes for Durdur Water Supply Company in South Galkayo Town

Durdur Water Comp	Latitude	Longitude	Depth (m)	Pump level
Durdur BH1	6.741248831N	47.43988958E	240	120
Durdur BH 2	6.738137N	47.4411202E	240	122

Note; The production of the boreholes is metered.

Storage Tank

There is an elevated water storage tank on with a different capacity as indicated below;

Table 3-5: Durdur Water Company existing storage capacity

Name of the location	Tank size
6°44'28.33"N, 47°26'23.67"E	200m ³ , 200m ³
6°44'28.33"N, 47°26'23.67"E	20m ³



Figure 3-9: Concrete water tank for Borehole for Durdur Water Co. Ltd

Source of Energy

The source of energy for the boreholes are solar, power grid and diesel generator.



Figure 3-10: Solar Panels for supply of power for Borehole for Durdur Water co. Ltd



Figure 3-11: Generator for supply of power for Borehole for Durdur Water Supply

❖ Electrical and mechanical installations

Figure 3-12: Existing power source and pump details in South Galkayo

Location	Generator Size	Solar panels	Pump size	Comments
Durdur BH1	180kVA	105 No* 400 w	11KW	No Stand-by generator
Durdur BH2	180kVA, 100kVA, 50kVA	120 No* 400 w	11KW	
Durdur BH3	Connected to grid	120 No* 400 w	11KW	
Durdur BH4	Connected to grid	75 No* 400 w	11KW	

Distribution

The water is then distributed into the towns water distribution network.

Table 3-6: Existing distribution network for Durdur

Pipe Description	Summary Length (m)
DN50	17,185
DN75	7,041
DN110	5,264
DN150	2,116
DN200	2,807
	34,413.00

Water Quality;

The water quality was measured at the borehole site and consumer taps.

Table 3-7: Summary of water quality-Durdur borehole and at the household tap

No.	Name	Latitude	Longitude	Depth (m)	Yield (m ³ /h)	TDS	EC	Sulphates	Fluorides

1	DurDur Bh 1	6.741252	47.439893	259	32	2,010	3,980	1720	4.63
2	Household tap					1,920	3,860	1085	4.1

Dur Dur borehole 1 also has Coliform of 142 MPN/100 and E. coli of 55MPN/100 above WHO 0 MPN/100 limit.

Household Metering;

Each household is metered with a consumer meter which is read once a month for billing purposes.

Water Production

The water production for Durdur water supply is from two boreholes with its yield at 1,834 m³/day as provided in the table below

Table 3-8: Water Production for Durdur Water Supply Company in South Galkayo Town

	Latitude	Longitude	Depth (m)	Pump level	Yield (m ³ /h)	Work Time	Production (M ³ /d)	EC
Durdur BH1	6.741248831	47.43988958	240	120	16	16	256	1760
Durdur BH 2	6.738137	47.4411202E	240	122	20	16	320	1800
Durdur BH 3	6°44'17.19" N	47°26'28.45"	250	200	25	15	375	
Durdur BH 4	47°26'28.45"	47°26'55.10"	250	180	22	17	374	
Total supply for Durdur							1,325	
38.43 % Non-Revenue Water							509	
Water Supply to The Area							1,834	

Non-Revenue Water

It is assumed non-revenue water is at 38.43% similar to the sister Company. Based on this, the water supplied to the consumers is 509 m³/day.

Employees for the Company

The company has 38 employees which are responsible for the day to day running of the water utility.

Their main challenge

The main challenge of the water utility is the operation and maintenance of the water supply infrastructure. The current tariff of 1.2 USD per m³ was reported not adequate to the cost of pumping and the staff cost by the company. The company reported for non-revenue water which is not taken care of in their operations.

3.6.4 Arafat Water Supply Company

The company is privately owned and have a PPP agreement the Galkayo South local government. The map below shows existing infrastructure for Arafaat company.

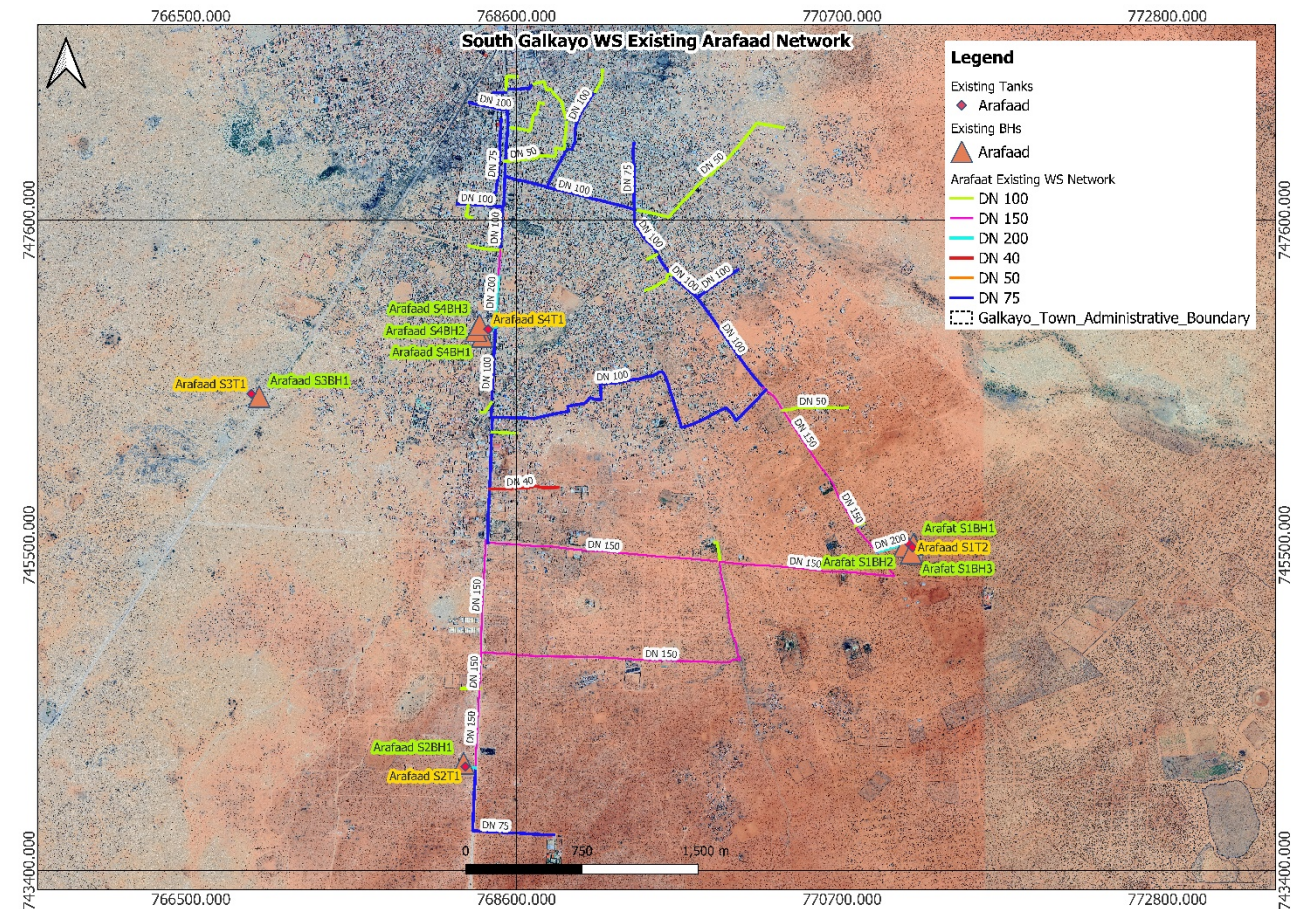


Figure 3-13: South Galkayo’s existing water supply infrastructure – Arafaat water company

Water Sources

The water utility runs for four borehole sites with 12 number boreholes. The daily production of each borehole was not established since each borehole was not metered.



Figure 3-14: Borehole site for Arafat Water Co. and the concrete water tank in the background

Water Storage

Arafat has several elevated concrete tanks as indicated below;

Table 3-9: Arafaat Water Company existing storage capacities

Name of the location	Tank size
6°44'18.28"N, 47°27'11.18"E	200m ³ , 300m ³
6°44'26.11"N, 47°26'22.79"E	200m ³
6°45'5.50"N, 47°25'40.09"E	200m ³



Figure 3-15: The elevated concrete water tank for Arafat Water Co.

4. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORKS

4.1 National Regulatory and Policy Framework

Table 4-1: National Regulatory and Policy Framework

Legal Provision	Description	Relevance
Constitution of Somalia (2012)		
Article 11	together with sub article (3) respectively provides that all citizens have equal rights regardless of sex, religion, social or economic status, political opinion, clan, disability, occupation, birth or dialect.	Services from water treatment plant would serve all citizens with no discrimination.
Article 14	stipulates that a person may not be subjected to slavery, servitude, trafficking, or forced labor for any purpose.	It prohibits the contractor from sourcing labour from underage citizens.
Article 24	Labor Relations: Every person has the right to fair labor relations. All workers, particularly women, have a special right of protection from sexual abuse, segregation and discrimination in the workplace.	The project will create employment opportunities for both skilled and non-skilled workers.
Article 25	Establishes the right to a clean and healthy environment.	- The project must integrate climate resilience, waste reuse/recycling, and pollution control. - The project contributes to fulfilling the constitutional right to health and environmental protection by improving water quality.
Article 45	Obligates the state to protect ecosystems, biodiversity, and natural resources.	The project must undergo Environmental and Social Impact Assessment (ESIA) before implementation to address all potential impacts to the environment.
Legislation & Policies		
Environment & Social Sectors		
National Environmental Policy (NEP)	Approved on 13 th February 2020, and backstopped by the Global Environment Facility (GEF) and the United Nations Development Program (UNDP), the stated goal of environmental policy is to improve the health and quality of life of the Somali people.	- The project involves interventions that will improve the health and quality of people. - The policy will guide during pipeline construction impacts, such as soil disturbance, vegetation clearance, and potential pollution from construction materials or fuels.
Environmental and Social	As of March 2021, the Directorate of Environment and Climate Change	The project must undergo Environmental and Social Impact

Impact Assessment (EIA) and Audit Regulations	has published draft environmental and social impact assessment (ESIA) regulations which provide detailed procedures for conducting EIAs, audits, public participation, and disclosure.	Assessment (ESIA) before implementation
Water Resources Law	Governs sustainable use, allocation, and protection of water resources; prohibits pollution of water sources	- The proposed project will comprise extending of water supply network and rehabilitation falling under sustainable allocation of water resource. - The law will guide abstraction permits, protection of existing water sources, and prevention of leaks and contamination along the pipeline.
The Somali Labour Code	It covers protection against risks to workers, notification procedures in occupational accidents, medical requirements at site and conveyance of injured workers to hospitals, among others.	- Construction activities involve local and possibly migrant laborers. - Risks include occupational health and safety (OHS) hazards, accidents, and labor influx impacts - The code will guide worker safety, PPE use, and trenching hazards during pipeline installation
Health Sector		
The National Health Sector Strategic Plan (HSSP-II 2017-2021)	Strategy is based on nine building blocks and prioritizes governance and leadership, followed by human resources, services delivery, health financing, pharmaceuticals and medical technology, health intelligence and information system, social determinants of health, emergency preparedness and response, and health infrastructure	- Water security facilities directly affect public health by reducing waterborne diseases (cholera, diarrhea). - Construction phase may create risks of dust, noise, sanitation issues, and accidents - The act will be reviewed during management of water quality, preventing contamination, and ensuring hygienic connections at consumer points.
Water & Sanitation Sector		
Constitution of Somalia 2012	guarantees the right to clean water, sanitation, and a healthy environment	The main objectives of proposed interventions are in line with promoting a healthy environment and providing clean water to citizens.
NEP 2017 EPMA 2024	Require ESIA's and safeguards for all water and sanitation projects	- ESIA approval is required before commencement of works - The act will guide during pipeline construction impacts, such as soil disturbance, vegetation clearance, and potential pollution from construction materials or fuels.
National Water Policy	Regulates water use, wastewater discharge, and pollution prevention	The proposed project is governed by said laws.

Security Sector		
National Security & Safety Frameworks	Federal Government and Federal member State are responsible for ensuring security and public safety, including around critical infrastructure	- Construction activities may attract theft, vandalism, or community tensions; presence of heavy equipment may cause safety risks - The act will be reviewed with regards to protection of water treatment plant assets against vandalism or interference.
Land Sector		
Constitution of Somalia (2012) - Land & Natural Resources Art 43	Requires that land and natural resources are managed in the public interest, with land allocation guided by law	The Water Treatment Plant is proposed on public land

4.2 Institutional Capacity for Environmental Management in FGS

Table 4-2: Institutional capacity in FGS

No.	Institution	Relevance
1.	Ministry of Environment and Climate Change (MoECC)	National policy oversight on environment, climate change, and safeguards; custodian of the Environmental Protection and Management Act (2024) and EIA regulations.
2.	Ministry of Energy and Water Resources (MoEWR)	Oversees water policy, water quality standards, groundwater/water source protection, and wastewater regulation at national level
3.	Federal Member State Ministries (Galmudug)	Responsible for the implementation and coordination of water resource management and infrastructure development within the region.
4.	UNEP - Environment Program	Providing environmental expertise, coordinating water management, fostering integrated water resource management for resilience against drought and floods, and promoting nature-based solutions.
5.	UNICEF Somalia	Supports WASH programming in schools and health centres; often co-funds or provides technical support in sanitation projects
6.	AfDB	Project financier; requires compliance with 2023 ISS. Provides technical guidance, safeguard screening, and monitoring during project lifecycle

4.3 Key International Instruments Ratified or Acceded to by Somalia:

Federal government of Somalia has ratified below listed Conventions

- (i) **Universal Declaration of Human Rights (UDHR)** – Affirms the equal rights of men and women and the right to non-discrimination, dignity, and freedom for all individuals. *Triggered through the right to health and a clean environment. The project complies by improving sanitation and reducing disease risks in schools and health centers.*
- (ii) **Convention on the Rights of the Child (CRC)** – Ratified by Somalia in 2015, it emphasizes the protection of children’s rights, including those of girls, and calls for the elimination of harmful practices like early marriage and FGM. *Triggered as the project targets schools and child health. Compliance is ensured by providing safe sanitation facilities that protect children’s dignity and health.*
- (iii) **Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)** – Somalia has **not yet ratified CEDAW**, which significantly limits formal international obligations on women’s rights protection. However, civil society and international partners continue to advocate for its ratification and domestication. *Triggered through gender-sensitive sanitation needs. The project complies by providing separate, safe sanitation facilities for women and girls.*
- (iv) **African Charter on Human and Peoples’ Rights** – Somalia is a party to the Charter, which supports gender equality and women's rights within the African human rights system. *Triggered through the right to a healthy environment and protection from harmful waste. Compliance is achieved through ESIA, pollution control, and sustainable waste management.*
- (v) **African Charter on the Rights and Welfare of the Child (ACRWC)** – Ratified by Somalia, reinforcing children’s rights, including protection from early and forced marriage, discrimination, and abuse. *Triggered by the project’s direct benefits to children in schools. Compliance is ensured by providing safe, accessible WASH services for children.*
- (vi) **Sustainable Development Goals (SDGs)** – Somalia has committed to the 2030 Agenda, with SDG 5 specifically focusing on achieving gender equality and empowering all women and girls, especially in access to education, health, water and sanitation, and economic opportunities. *Triggered mainly SDG 6 (Clean Water & Sanitation), SDG 3 (Good Health), SDG 13 (Climate Action), and SDG 11 (Sustainable Cities). The project contributes by expanding access to improved sanitation and climate-resilient systems.*
- (vii) **Kyoto Protocol (2005)**: Aim at reducing greenhouse gas emissions and combat climate change by setting binding emission reduction targets for developed countries.
- (viii) **Bamako Convention on (1991)**: It ensures ban on the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (1991).

- (ix) **Basel Convention on the (1989):** It seeks to control Transboundary Movement of Hazardous Wastes and their Disposal.
- (x) **Rotterdam Convention (1998):** It stipulates the prior informed consent procedure for certain hazardous chemicals and pesticides. *Triggered for chemicals and pesticides. Compliance is ensured by avoiding banned chemicals in construction/operation (e.g., avoiding asbestos pipes, toxic disinfectants).*
- (xi) **Convention on Oil Pollution Preparedness, Response, and Co-operation (1990):** It aims to ensure that countries develop and maintain adequate measures for dealing with oil pollution incidents. *Triggered by construction machinery and fuel storage risks. Compliance includes site-specific spill prevention and emergency response plans.*
- (xii) **International Energy Charter (2015):** It aims to enhance energy security, encourage open and competitive energy markets, support sustainable energy development, and promote energy efficiency and environmental protection among member states. *Triggered through the project's potential use of renewable/efficient energy for treatment plants. Compliance is achieved by integrating energy-efficient systems (solar pumping, low-energy treatment technologies).*

4.4 Relevant International Labour Organization (ILO) and Human Rights Instruments

- Convention concerning Safety in the use of Chemicals at Work (Entry into force: 04 Nov 1993) Adoption: Geneva, 77th ILC session (25 Jun 1990) - Status: Up-to-date instrument (Technical Convention); *Triggered during construction/operation where chemicals (e.g., disinfectants, treatment reagents, fuels) are handled.*
- Occupational Safety and Health Convention (1981) and its Protocol of (2002); *Triggered in ensuring safe working conditions at construction sites.*
- Promotional Framework for Occupational Safety and Health Convention, (2006) (No. 187); *Triggered in establishing a safety culture across the project.*
- Convention concerning the Prohibition and Immediate Action for the Elimination of the worst forms of Child Labour (2002); *Triggered due to risks of child labor in construction supply chains.*
- International Convention on the Elimination of All Forms of Racial Discrimination (CERD) (1976); *Triggered in hiring and community engagement.*
- Optional Protocol to the Convention on the Rights of Persons with Disabilities (2007); *Triggered by the need to ensure accessibility of all resources.*
- The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (1985); *Triggered in gender-sensitive WASH provision.*
- The Convention on the Rights of Persons with Disabilities (CRPD) (2012); *Triggered in ensuring equitable access to water and sanitation services.*
- The International Covenant on Civil and Political Rights (ICCPR) (2004); *Triggered by the project's obligation to respect community rights (participation, consultation, grievance redress.*
- The International Covenant on Economic, Social and Cultural Rights (ICESCR) (2004).

4.5 Regional Treaties Relevant to GBV, SEA, VAC and Persons Living with Disability (PLWD)

- African Charter on Human and Peoples' Rights (1981);
- Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (Maputo Protocol) (2003);
- Violence and Harassment Convention (2019) No.190;
- AU Disability Protocol (Protocol to the African Charter on Human and Peoples' Rights on the Rights of Persons with Disabilities in Africa) (2018);
- Economic Community of West African States (ECOWAS) Gender Policy (2005, revised 2020);
- COWAS Plan of Action to Address Gender-Based Violence (2020–2030);
- Convention Against Torture & other Cruel, Inhuman or Degrading Treatment or Punishment (CAT) (2001);
- Convention on the Rights of Persons with Disabilities (2007);
- The Convention on the Rights of the Child (CRC) (1990);
- The National Action Plan for the Implementation of United Nations Security Council Resolution 1325 (2009);
- The Protocol to the ACHPR on the Rights of Women in Africa (the "Maputo Protocol") (2007).

4.6 African Development Bank Integrated Safeguards System)

In 2013, the African Development Bank adopted an Integrated Safeguards System (ISS) (also referred to as the "2023 ISS"), which established the Bank Group's commitment to sustainable development, consolidating and building on the Environment (2004) and Involuntary Resettlement (2003) safeguard1 policies, as well as cross-cutting policies and strategies on gender (Gender Strategy for 2021–2025, "Investing in Africa's Women to Accelerate Inclusive Growth"), and then the Civil Society Engagement Framework (2012).

1. The updated ISS improves the consistency of the Bank's approach to key thematic issues, Environmental and Social Assessment (ESA), and stakeholder engagement activities by adopting 10nr Oss. The 10nr E&S OSs set out the requirements for Borrowers relating to the identification and assessment of E&S risks and impacts associated with operations supported by the Bank.

The ten E&S OSs establish the standards that Borrowers shall meet, as appropriate, in projects, activities, and initiatives supported through Bank financing throughout the life cycle of operations, the OS are summarized in the table sub sections below.

Environmental and Social Operational Safeguard (OS) provisions and Applicability to the Project

Table 4-3: Social operation safeguards provision

#	OS	Provisions	Project Applicability
1	Environmental and Social Operational Safeguard 1: Assessment and Management of Environmental and Social Risk and Impact.	Environmental and Social Operational Safeguard 1: Assessment and Management of Environmental and Social Risk and Impact. The aim of this overarching Operational Safeguard (OS), together with the OSs that complement it, is to mainstream environmental and social (E&S) considerations, including those related to climate change vulnerability. into Bank operations and thereby contribute to sustainable development in the continent. The objectives of OS1 are to Identify and assess the E&S risks and impacts including those related to gender inequalities, climate change, and vulnerability of Bank lending, investment, and grant-supported operations, in their areas of influence in a manner consistent with the OSs among others	Conduct an Environment and Social Assessment (ESA) of the proposed project, including stakeholder engagement; Undertake stakeholder engagement and disclose appropriate information in accordance with OS10; Develop an Environmental and Social Plan (ESMP) and implement all measures and actions set out in the financing agreement including the ESMP; and Conduct monitoring and reporting on the E&S performance of the project against the OSs.
2	Environmental and Social Operational Safeguard 2: Labour and Working Conditions	The objectives of OS2 are as follows: To protect workers' rights., To promote safety and health in the workplace and to promote the fair treatment, non-discrimination, and equal opportunity of project workers among others. The categories of workers include; People employed or engaged through third parties to perform work related to the core functions¹⁰⁹ of the project, regardless of location (contracted workers). People employed or engaged by the Borrower's primary suppliers¹¹⁰ (primary supply workers); People employed or engaged in providing community labour (community workers).	The borrowers shall under take below listed prior to implementation of the Project Labour Management Procedures (LMPs) that will detail Working conditions and management of worker relationships Preparation of Occupational Health and Safety Management Plan prior to commencement of works Registration with applicable occupational health and safety
3	Environmental and Social Operational Safeguard 3: Resources Efficiency and Pollution Prevention and Management	This Operational Safeguard (OS) recognizes that economic activities often cause air, water, and land pollution, and The OS provides that the Borrower shall implement technically and financially feasible measures for improving the efficient consumption of energy, water, and raw materials, as well as other resources. The Borrower shall apply pollution prevention and control measures consistent with national legislation and standards, applicable international conventions, and internationally recognized standards and good practice, particularly the Environment Health and Safety Guidelines (EHSGs)	The BORROWER at design Stage shall; Implement Resources efficiency technologies that supports efficient consumption of energy, water, and raw materials, as well as other resources Prepare Pollution Management Plans such as E-Waste Management Plan, Solid and Liquid Waste Management Plan

4	Environmental and Social Operational Safeguard 4: Community Health, Safety and Security	OS4 addresses the health, safety, and security risks to and impacts on project-affected communities and the corresponding responsibility of the Borrower to avoid or minimize them, with particular attention to people who, due to their particular circumstances, may be vulnerable. This OS addresses potential risks to and impacts on communities that may be affected by project activities. Occupational health and safety (OHS) requirements for project workers are set out in OS2, and measures to avoid or minimize impacts on human health and the environment due to existing or potential pollution are set out in OS3	The BORROWER will prepare Community health and safety Management Plan Ensure Worker Sign Code of Conduct Prepare and Implement Traffic Management Plan Prepare and implement labour Influx Management Plan Emergency preparedness and response Plan Prepare Security Management Plan
7	Environmental and Social Operational Safeguard 7: Vulnerable Groups	This OS recognizes that some cultural groups, due to their lifestyle, culture, and strong dependence on the natural environment, have identities and aspirations that are distinct from mainstream groups in national societies and are often disadvantaged by traditional models of development. In many instances, they are among the most economically marginalized and vulnerable segments of the population The objectives of OS7 is to ensure that vulnerable groups and individuals are identified as early as possible in Bank Group operations and that engagement is meaningful, taking into account individuals' and communities' specificities, and delivered in an appropriate form	If the cable interphase with such communities, the BORROWER will undertake below listed Early identification of vulnerable groups Social assessment Special considerations related to highly vulnerable rural minorities Adequate Public consultation and participation Vulnerable groups and broader development planning Timely address of Grievances from such communities
9	Environmental and Social Operational Safeguard 9: Financial Intermediaries	This OS addresses the environmental and social (E&S) requirements associated with intermediated financing through financial and non-financial institutions FIs will put in place and maintain an ESMS to identify, assess, manage, and monitor the E&S risks and impacts of FI subprojects on an ongoing basis. The ESMS will be commensurate with the nature and magnitude of E&S risks and impacts of FI subprojects, the types of financing, and the overall risk aggregated at the portfolio level	The OS provides for below listed Preparation of Environmental and Social Management System Adequate Stakeholder engagement
10	Environmental and Social Operational Safeguard 10: Stakeholder Engagement and Information Disclosure	The OS provides that Borrowers shall engage with stakeholders throughout the project life cycle, commencing as early as possible in the project development process and in a time frame that enables meaningful consultations with stakeholders on project design. The nature, scope, and frequency of stakeholder engagement will be proportionate to the nature and scale of the project, and its potential risks and impacts The objectives of OS10 is to establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders, and build and	The OS requires below listed with respect to the Project Engagement during project preparation Preparation of The Stakeholder Engagement Plan Establishing a functioning Grievance mechanisms . Engagement during project implementation and external reporting Organizational capacity and commitment

		maintain a constructive relationship and channels of communication with them, in particular project-affected parties among other objectives	
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4.7 Comparison Between FSG and international Standards

Table 4.4 Comparison of the FGS Frameworks vs other international standards adopted in this project

Thematic Area	FGS Frameworks	AfDB ISS (2023) Safeguards	Other International Standards	Relevance to the Project
Environmental Protection & ESIA	Environmental Protection & Management Act (2024); EIA & Audit Regulations	OS 1: Environmental & Social Assessment – comprehensive ESIA required	Basel Convention (1989), Bamako Convention (1991)	Project requires ESIA approval, mitigation of wastewater/sludge impacts, and safe waste management.
Water & Sanitation	Water Resources Law; National Environmental Policy (2017)	OS 4: Pollution Prevention and Control – efficient resource use & pollution prevention	SDG 6 (Water & Sanitation), ICESCR (Right to Water)	Ensures sustainable water use, wastewater treatment standards, and safe sanitation facilities.
Health & Safety	Public Health Law; Somali Labor Code (1972)	OS 5: Labour Conditions, Health and Safety – safeguard workers & communities	ILO OHS Conventions (1981, 2006), WHO Guidelines	Protects construction workers and reduces disease risks in schools & health centers.
Climate Change & Resilience	Climate Change Policy (2020); NAP Framework	OS 2: Climate Change – low-carbon, climate-resilient development	Kyoto Protocol, Paris Agreement, SDG 13	Design integrates climate resilience (e.g., solar pumping, flood-resistant structures).
Land & Natural Resources	Constitution (2012) on land ownership; Land Tenure (customary + municipal laws)	OS 3: Biodiversity & Ecosystem Services – protect ecosystems	African Charter on Human & Peoples' Rights (Right to Environment)	Facility siting must respect land tenure, avoid riparian damage, and maintain project area ecology.

5. STAKEHOLDER CONSULTATIONS

The Stakeholder Engagement Strategy for this water and sanitation project is designed to ensure inclusive participation and ownership at all levels, particularly among those who are directly or indirectly affected by sub-project activities. It aims to identify and address stakeholder needs, expectations, concerns, and grievances through proactive engagement and feedback mechanisms. By doing so, the strategy seeks to promote transparency, collaboration, and accountability throughout the project's lifecycle, fostering trust between stakeholders and implementers. Ultimately, this approach will strengthen the social license to operate, helping to reduce the risks of resistance or conflict and ensuring smoother implementation and sustainable outcomes.

5.1 Identified stakeholders and their roles

The South Galkayo WASH Project involves a wide range of stakeholders drawn from government institutions, development partners, local authorities, traditional leaders, and community organizations, each playing a key role in ensuring the project's successful implementation and sustainability.

Government Ministries:

The Ministry of Energy, Minerals and Water Resources leads implementation, design approval, and supervision, while the Ministry of Environment, Agriculture and Climate Change oversees ESIA approval, compliance, and climate safeguards. The Ministry of Health ensures water quality, hygiene, and disease control.

Local Authorities:

South Galkayo Municipality and District Administration manage land allocation, permits, and community engagement. Community Water and Sanitation Committees oversee local water points, maintenance, and equitable access, while local elders mediate land issues and support social acceptance.

Development Partners:

UNICEF and AfDB (through AWF) provide financial and technical support, enforce safeguard standards, and strengthen institutional capacity. FAO (via SWALIM) offers hydrological data and groundwater monitoring. The Ministry of Planning ensures project alignment with national frameworks.

Private Sector and Beneficiaries:

Contractors and consultants handle design, construction, and rehabilitation under PMU supervision for quality and compliance. Local communities and IDPs participate in consultations and benefit from improved water access.

Civil Society and Security:

CSOs and NGOs promote hygiene, gender inclusion, and capacity building. Security agencies ensure safety at project sites and protect personnel and assets.

5.2 Stakeholder Consultation Methodology

Stakeholder engagement was conducted in the following ways;

- a) **Key informant interviews (KIIs)** with local authorities, WASH service providers, women's groups, and elders. Focus was to establish for any existing UNICEF gender programmatic review (if one has been conducted), especially if WASH programming was reviewed.
- b) **Focus group discussions (FGDs)** disaggregated by sex and age to capture diverse perspectives.
 - ✓ The first FGD was held with a government official from the department of physical planning about the interventions they would require help with in terms of WASH from the project.
 - ✓ Another discussion was held with the women at Hayaan Bacaadweyne IDP camp to understand their needs about sanitation and general hygiene
 - ✓ The other FGD was held with CISP an NGO dealing with Gender issues in Somalia and specifically South Galkayo
 - ✓ The last one was held at Galkayo Hospital with the General Manager to understand the gaps and challenges they face in terms of providing services especially with focus on WASH activities.

Table 5.1 Stakeholder Engagement Matrix

Stakeholder	Category / Level	Interest in Project	Influence	Roles and Responsibilities
Galmudug Ministry of Energy, Minerals & Water Resources (MoEMWR)	Government / Lead Implementing Agency	High - responsible for water sector policy, coordination, and infrastructure development	High	Lead implementing agency; oversight of design and construction; ensures project aligns with Puntland Water Policy and national WASH objectives.
Galmudug Ministry of Environment, Agriculture & Climate Change (MoEACC)	Government / Regulator	High - ensures environmental protection and sustainability	High	Reviews and approves ESIA; issues Environmental Compliance Certificates; monitors environmental safeguards and climate resilience measures.
Galmudug Ministry of Health (MoH)	Government / Health Authority	High - focuses on public health and sanitation outcomes	Medium	Oversees water quality monitoring and health risk management; coordinates with project on hygiene promotion and disease surveillance.
Galmudug Municipality / District Administration	Local Government	High - manages land, permits, and community coordination	High	Facilitates land allocation and construction permits; coordinates urban planning and community engagement; supports local conflict resolution.
Community Water and Sanitation Committees (CWSCs)	Community / Local Governance	High - directly manage and maintain water facilities	Medium	Oversee local water points and treatment plants; ensure equitable access and community participation in operation and maintenance.
Local Elders and Clan Leaders	Traditional Authority	High - influence social acceptance and land access	Medium-High	Confirm land ownership and boundaries; mediate disputes; facilitate community buy-in and peaceful coexistence.
UNICEF	Development Partner / Financier	High - provides funding and technical support	High	Finances and supports project implementation; ensures adherence to UNICEF Environmental and Social Standards (ESS); monitors social and gender impacts.
African Development Bank (AfDB) / African Water Facility (AWF)	Development Partner / Financier	High - co-funding and safeguard oversight	High	Provides financing, ensures compliance with AfDB Integrated Safeguards System (ISS), and monitors environmental and social performance.
FAO - Somalia Water and Land Information Management (SWALIM)	Technical Partner / Research Institution	Medium - supports data collection and water resource management	Medium	Provides hydrological data, groundwater monitoring, and technical inputs for sustainable water resource management.

Ministry of Planning, Investment, and Economic Development (MoPIED)	Government / Coordination	Medium - ensures national alignment and donor coordination	High	Ensures project aligns with national plans; coordinates with donors and oversees reporting.
Contractors and Consultants	Private Sector / Service Providers	High - responsible for design and construction	High	Execute construction, rehabilitation, and installation of water infrastructure; adhere to EHS standards; implement ESMP measures.
Supervising Engineer / Project Management Unit (PMU)	Technical Oversight	High - ensures quality and compliance	High	Supervises works, ensures adherence to specifications and safeguards, and prepares progress and compliance reports.
Local Communities and IDPs	Beneficiaries	Very High - direct users of improved WASH services	Low-Medium	Participate in consultations; provide local knowledge; benefit from improved access to safe water and sanitation.
Civil Society Organizations (CSOs) / NGOs	Development / Advocacy	Medium - promote community empowerment and inclusion	Medium	Support community sensitization, gender inclusion, hygiene promotion, and grievance redress.
Security Agencies (Police, Local Administration)	Public Safety / Law Enforcement	Medium - responsible for protection of assets and personnel	Medium-High	Provide site security, protect equipment and workers, and respond to safety or conflict incidents.

5.3 Stakeholder Consultations Summary

5.3.1 Consultation Actions and Methodology

A comprehensive and inclusive consultation strategy was implemented to engage a wide range of stakeholders. The methodology combined several participatory techniques to ensure that all groups, including the most vulnerable, had an opportunity to voice their opinions.

The primary actions taken included:

- **Public Meetings (Barazas):** Open community meetings were held in key neighborhoods and within the Internally Displaced Person (IDP) camps. These gatherings provided a platform to disseminate information about the project's objectives, scope, and potential impacts, and to receive direct feedback from the community at large.
- **Focus Group Discussions (FGDs):** Separate FGDs were conducted with specific demographic groups, such as **women, youth, and water vendors**. This approach allowed for a deeper exploration of group-specific issues, needs, and concerns in a more comfortable setting. The women's FGDs, for instance, focused heavily on issues of safety, privacy, and menstrual hygiene management related to WASH facilities.
- **Key Informant Interviews (KIIs):** In-depth interviews were held with key stakeholders possessing specialized knowledge or holding positions of influence. This group included local government officials, community elders, religious leaders, and staff from local NGOs active in the WASH sector.

All consultations were conducted in the Somali language by trained facilitators, ensuring clear communication and active participation.

5.3.2 Outcomes of the Consultation

The consultations were highly productive, yielding valuable insights that have directly informed the project design and the mitigation measures outlined in the Environmental and Social Management Plan (ESMP).

Key discussion points and outcomes are included in the Key Informant Interviews, Focus Groups Discussions and institutional visits detailed in this chapter.

Overall Outcome of Stakeholder Consultation

The stakeholder consultation process confirmed that there is universal and enthusiastic support for the project. The feedback received was overwhelmingly positive, with participants viewing the project as a critical and long-overdue intervention to address the severe water and sanitation crisis.

A total of 5 key informant interviews and 6 Focused Group Discussions (FGD) were conducted with representatives from the following sectors between May 29th 2025 – June 4th 2025. Additionally, Public participation forums were held from 3rd to 4th September, 2025 at the Five Star Hall Galkayo South.

5.3.3 Key Informant Interviews

A total of 5 KIIs have been conducted with representatives from the following sectors:

Table 5-2: Key Informant Interviews

Institution / Stakeholder	Date	Key Issues Discussed
Ministry of Women and Human Rights Development (MoWHRD) – Galmudug	May 31 st 2025	Gender gaps in WASH policies, GBV referral pathways, FGM prevalence, and MHM needs
Ministry of Water and Energy – South Galkayo Office	May 30 th 2025	Access to safe water, community water management, challenges in IDP settlements
Galkayo Local Authority (Municipal Office)	May 29 th 2025	Urban sanitation, solid waste management, and community infrastructure needs
Ministry of Health – Galkayo Hospital	June 4 th 2025	Public health and hygiene, links between WASH and maternal/child health
Representatives from Local NGOs (e.g., CISP)	June 4 th 2025	Women's participation in service delivery, local, GBV issues, WASH interventions, community outreach

5.3.4 Focus Group Discussions

Table 5-3: Focus Group Discussions

Group Type	Date	Location	Key Issues Raised
Women-headed households (IDP camp)	June 1 st 2025	Hayaan Bacaadweyne Camp	Long distances to water points, lack of latrines, MHM challenges, security concerns
Adolescent girls (ages 13–18)	May 31 st 2025	Hayaan Bacaadweyne Camp	Lack of MHM materials, school attendance issues, privacy in sanitation facilities
Men (local leaders & elders)	May 30 th 2025	Town Center	Community roles in infrastructure, traditional norms, support for water systems
Female youth (ages 18–30)	May 31 st 2025	Town Center	Vocational needs, participation in water committees, menstrual stigma

Group Type	Date	Location	Key Issues Raised
Male youth	June 2 nd 2025	South Galkayo Market	Livelihood challenges, involvement in hygiene promotion, water source maintenance
Women entrepreneurs	June 2 nd 2025	South Galkayo Market	Access to microfinance, sanitation in market areas, female business participation

Table 5-4: Public Forums on 3rd to 4th September, 2025 at Five Star Hall

#	Issue	Mitigation
1	Some of the proposed site locations might be unsuitable due to close proximity to critical social infrastructure (health center, mosque, residential homes) and newly established vulnerable IDP households.	To relocate current health centre, IDPs settlement and stop town growing towards this direction or to assign another location for this project
2	Despite the positive outcomes, the project may generate environmental and social risks. These include vegetation loss, soil degradation, and potential overuse or pollution of water resources.	To minimize risks, environmental impact assessment (EIA) recommendations and environmental management plans (EMPs) must be implemented
3	A labor influx management plan and community awareness programs on health, gender, and education are recommended.	Local labor should be prioritized, and contractors must follow fair labor standards
4	Health and safety risks can be mitigated by enforcing occupational safety standards, providing personal protective equipment (PPE), training workers regularly, and monitoring pollution levels with appropriate dust and noise control measures.	Continuous monitoring and evaluation (M&E) will allow timely corrective actions, while a grievance redress mechanism will ensure community concerns are addressed. Alignment with Somalia's National Environmental Policy (2020) will further strengthen transparency, inclusivity, and sustainability in project implementation.

5.3.5 Meetings Outcome

1. Limited access to water (long distances to water points)

- **Outcome:** Heavy burden on women/children, reliance on unsafe sources.
- **Measures:** Construct water points closer to communities and schools; install storage tanks and pipelines to reduce walking distance.

2. Unsafe and inadequate sanitation (lack of privacy/safety at latrines, poor school sanitation, stigma around menstruation)

- **Outcome:** Protection risks, open defecation, school absenteeism for girls, spread of diseases.

- **Measures:** Build gender-segregated and disability-friendly latrines with lighting and privacy; provide menstrual hygiene facilities and supplies; improve sanitation in schools and health centers.
- 3. **Low awareness and limited inclusion in WASH (gender-specific needs not considered, stigma, weak capacity)**
 - **Outcome:** Exclusion of women and vulnerable groups, poor hygiene practices, weak facility maintenance.
 - **Measures:** Conduct inclusive WASH education, hygiene promotion campaigns, and menstrual hygiene awareness; ensure women and vulnerable groups participate in decision-making; strengthen capacity of WASH committees, teachers, and health staff.
- 4. **Poor waste management (need for recycling facilities and hygiene support)**
 - **Outcome:** Solid waste buildup, environmental pollution, increased disease risks.
 - **Measures:** Establish recycling and waste segregation systems; promote composting/reuse; support community hygiene programs led by local champions.
- 5. **Underutilized institutions (schools and health centers not fully engaged in WASH promotion)**
 - **Outcome:** Lost opportunity for behavior change and sustained hygiene improvement.
 - **Measures:** Equip schools and health centers with adequate WASH facilities; use them as platforms for hygiene education, awareness campaigns, and training.

5.4 Government and Institutional Visits

In addition to interviews, visits were made to:

- District Administration Office: Discussed governance and coordination of basic services.
- Water Service providers and Boreholes: Observed operation, tariff practices, and community usage patterns.
- Health Centers and IDP Camps: Inspected hygiene facilities, water availability, and MHM provisions.

Women's Centers and Safe Spaces: Engaged with service providers supporting GBV survivors and awareness programs.

5.4.1 Stakeholder Meetings Outcome

1. District Administration Office

- Gained insights into the governance structures responsible for coordination of water, sanitation, and hygiene (WASH) services.
- Identified gaps in capacity and resources, highlighting the need for stronger institutional support and better alignment between district authorities and service providers.
- Confirmed willingness of the administration to collaborate with development partners on WASH infrastructure and service delivery.

2. Water Service Providers and Boreholes

- Observed that operations are functional but constrained by aging equipment, high maintenance costs, and irregular supply.
- Tariff practices revealed inconsistencies, with affordability challenges for vulnerable households.
- Community reliance on boreholes underscored the urgency of upgrading infrastructure and ensuring fair pricing mechanisms.

3. Health Centers and IDP Camps

- Inspections showed inadequate hygiene and sanitation facilities, with limited or intermittent water availability.
- Menstrual hygiene management (MHM) materials and private facilities were insufficient, contributing to reduced dignity and poor health outcomes, especially for women and girls.
- The findings emphasized the need to integrate WASH improvements into health centers and IDP settlements to reduce disease risks and improve well-being.

4. Women's Centers and Safe Spaces

- Discussions revealed ongoing support for gender-based violence (GBV) survivors, but facilities were under-resourced.
- Awareness and advocacy programs were ongoing, yet limited in reach due to funding and staffing constraints.
- Consultations highlighted the importance of embedding gender-sensitive WASH solutions and linking them with GBV awareness initiatives to strengthen protection and empowerment

5.5 Planned Stakeholder Engagement Activities

5.5.1 Stakeholder Engagement Plan (SEP)

1. Introduction

The SEP outlines how stakeholders will be identified, consulted, informed, and engaged throughout the project lifecycle. It ensures compliance with AfDB ISS Guidance Note 10 and Somali regulatory frameworks on community engagement.

2. Objectives of the SEP

- Identify and analyze stakeholders (interest, influence, and vulnerability).
- Provide a framework for transparent and culturally appropriate engagement.
- Ensure timely disclosure of information to all stakeholders.
- Establish a functional grievance redress mechanism (GRM).

Build ownership and support for sustainable project operation.

Table 5.5 Stakeholder Mapping Matrix

Category	Stakeholder	Interest/Concerns	Influence/ Power	Engagement Approach
Primary (Directly Affected)	School students & teachers	Safe, hygienic sanitation facilities	Medium	Awareness sessions, school committees
	Health centre staff & patients	Reduced disease risks, safe wastewater handling	Medium	Workshops, staff training, noticeboards
	Local communities (adjacent households)	Odour, safety, local employment	Medium	Community meetings, flyers, grievance desk
Secondary (Indirectly Affected)	Traditional elders & religious leaders	Land access, social acceptance	High	Consultative forums, inclusion in GRM
	Women's groups	Safety, menstrual hygiene management	Medium	Gender-focused consultations
	Youth groups	Local jobs, training opportunities	Low	Public consultations, skills programs
Institutional Stakeholders	Ministry of Environment & Climate Change	ESIA approval, monitoring	High	Formal meetings, compliance reporting
	Ministry of Health	Sanitation-health linkages	High	Joint inspections, technical coordination
	South Galkayo Municipality	Land allocation, service delivery	High	Regular coordination meetings
Development Partners Private Sector	AfDB	Safeguards compliance, financing	Very High	Formal reporting, AfDB missions
	UNICEF Somalia	Technical standards for WASH	High	Coordination workshops, joint monitoring
	Local contractors	Project delivery, safety	Medium	Contractor agreements, OHS monitoring
	Waste service providers	Sludge management, O&M	Medium	Partnership agreements

4. Stakeholder Engagement Activities

- **Preparation & Design Phase:** Public consultations, ESIA disclosure, validation of site selection.
- **Construction Phase:** Continuous community updates, safety briefings, OHS monitoring, job opportunities.
- **Operation Phase:** Hygiene promotion, capacity building of school/health staff, periodic community outreach.

5. Information Disclosure

- **What:** ESIA/ESMP summaries, project timelines, OHS measures, GRM procedures.
- **How:** Flyers in Somali language, public noticeboards at schools'/health centers, radio programs, AfDB website.
- **Principle:** Timely, accessible, culturally sensitive disclosure.

6. Grievance Redress Mechanism (GRM)

- **Community-level complaint desks** at schools and health centers.
- **Escalation** to Ministry.
- **Final appeal** through AfDB safeguard focal points.
- Free, accessible, and inclusive for all groups, including women and children.

7. Feedback Mechanisms

- Biannual community meetings to share project updates.
- Publicly displayed summaries of resolved grievances.
- AfDB and Puntland government disclosure of monitoring results.

8. Budget for SEP Implementation

Table 5.6 SEP implementation budget

Activity	Estimated Cost (USD)
Consultations & Meetings	2,500
Information Disclosure (media, flyers, translation)	2,500
Grievance Mechanism (training, staff, desks)	3,000
Monitoring & Reporting	1,500
Contingency	500
→ Total Estimated SEP Budget:	10,000 USD

9. Monitoring and Reporting

- **Indicators:** Number of consultations held, % of vulnerable groups consulted, grievances resolved, community satisfaction rate.

- **Frequency:** Quarterly monitoring reports; annual review with AfDB.

5.5.2 Project implementation phase

OS 10 (Stakeholder Engagement and Information Disclosure) ensures that the SEP will remain fully operational throughout construction. During the construction Phase the stakeholders will be engaged and key activities will include:

- ✓ Regular information updates to communities on construction schedules, traffic management, safety protocols, and anticipated disruptions, to mitigate rumours and opposition.
- ✓ Real-time impact monitoring through community feedback channels to track and adaptively manage dust, noise, labour influx, and other construction-related effect.
- ✓ Ongoing grievance-redress support, ensuring new or evolving concerns particularly those affecting local livelihoods are addressed before escalation.

5.5.3 Project closure phase

During the completion stage the stakeholders will be involved in activities encompassing final inspections, ex-post RAP evaluation, and commissioning. The following engagement activities will be conducted to secure sustainable handover-

- ✓ Validation of compensation and restoration outcomes, co-verified with affected persons to confirm delivery of agreed entitlements
- ✓ Lessons-learned workshops with stakeholders to capture effective practices and areas for improvement, informing future projects.
- ✓ Transition planning sessions with communities and local authorities to formalize long term monitoring and maintenance responsibilities.

Table 5-7: Summary of planned stakeholder engagement in project implementation phase

Engagement Type	Purpose	Number of Meetings
Pre-Construction Sensitization	Meetings Ensures early disclosure of construction plans, timelines, and risks to promote informed stakeholder participation.	5
Construction Kick-Off Meeting	Promotes coordination and clear communication of roles/responsibilities, aligned with inclusive engagement principles.	1
Monthly Community Feedback	Forums Fulfils OS 10's requirement for continuous consultation to manage emerging issues and maintain social license.	20
Grievance Redress Meetings	Provides access to an effective GRM as required by OS 10 to address construction-related complaints in real-time.	8
Environmental & Social Risk	Monitoring Sessions Ensures that construction risks (dust, waste, labour influx) are monitored with stakeholder involvement, as required.	8
Labour Engagement Meetings	Promotes non-discriminatory employment practices, working conditions, and grievance channels for workers.	4
Traffic and Public Safety Meetings	Informs stakeholders of potential access disruptions and ensures inclusion of vulnerable road users (per OS 10)	8
Women and Vulnerable Group	Dialogues Supports equitable participation, safeguards vulnerable populations, and captures gender-specific concerns.	2
Emergency Response and	Preparedness Meetings Ensures communities are informed and prepared to respond to construction-related incidents or health risks.	4
Decommissioning meeting	A decommissioning meeting will be convened to formally mark the closure of project activities and to ensure a transparent, inclusive, and accountable handover process. The meeting will bring together key stakeholders, including representatives from the implementing agency, local government officials, community leaders, project-affected persons (PAPs), and the project team.	1

5.5.4 Process to be followed for arranging engagement activities

- Engagement planning & scheduling:** This will involve drafting of an engagement calendar aligned with project timelines, selection of venues based on accessibility and security considerations.
- Notification & mobilization:** This will involve issuing of formal invitations or public notices (radio, posters, local leaders), and mobilization at least 5 working days in advance.
- Logistics and resource preparation:** This will include securing venues, arranging refreshments, transport support for vulnerable group, prepare communication materials (presentations, banners, feedback forms), setting up the venue etc.

- d) **Conduct of engagements:** This will be the recording of proceedings and gathering feedback systematically.
- e) **Post-engagement follow-up:** This will involve compiling of meeting minutes and sharing with participants, integration of feedback into project planning.

5.5.5 Engagement protocols

During engagement, the following protocols shall be applied; -

- **Respect and Inclusivity:** Ensure respectful, inclusive participation with attention to gender, age, and disability considerations.
- **Free, Prior and Informed Consent (FPIC):** Engagements must be voluntary, based on complete and timely information.
- **Language and Communication:** Use local languages and culturally appropriate methods to ensure understanding.
- **Documentation and Transparency:** Maintain detailed minutes, attendance records, and audio/visual documentation (if permitted).
- **Feedback and Grievance Mechanism:** Inform stakeholders of grievance procedures and encourage constructive feedback.
- **Security and Ethics:** Ensure safe environments and adhere to ethical standards of engagement.

6. ANALYSIS OF ALTERNATIVES

6.1 Water Treatment Plant Material Alternatives

The choice of pipe material is influenced by:

- Hydraulic and structural design i.e., whether it is gravity or forced sewer.
- Resistance to chemical and biological processes internally and externally e.g., corrosion
- Physical properties of the pipe material i.e., strength (to prevent abrasion)
- Types and number of joints; in view of water tightness which affects infiltration.
- Availability of required sewer diameters and necessary joint fittings
- Cost and ease of materials and installation.

Due to the numerous requirements in the proposed sanitation works, a combination of various pipe materials, which are manufactured locally to internationally recognized standards have been considered.

6.2 Water Treatment Process Options

Water treatment processes will be implemented to design the works, ensuring compliance with the water quality standards outlined by the Ministry of Energy and Water Resources (MoEWR).. The following ground water treatment processes are applicable in Somalia:

6.2.1 Aeration

- Purpose: Adds oxygen to the water and removes volatile compounds (e.g., CO₂, H₂S, methane).
- Benefits:
 - Oxidizes iron and manganese to insoluble forms for easier removal.
 - Improves taste and smell.
 - Provides dissolved oxygen for downstream biological processes.

6.2.2 Sand Filtration

- Purpose: Removes suspended solids and acts as a medium for biological processes (e.g., iron and manganese bacteria).
- Benefits:
 - Particle removal.
 - Biological support for nitrification or manganese removal.
 - Protects downstream equipment (e.g., membranes).

6.2.3 UV Disinfection

- Purpose: Provides a hygienic barrier against pathogens (bacteria, viruses, protozoa).
- Benefits:
 - Fast and chemical-free disinfection.
 - Avoids formation of chlorination by-products.
 - Often used as a secondary barrier together with chlorine for residual effect in distribution.

6.2.4 Optional/Additional Treatments

- **Softening:**
 - Reduces calcium hardness, lowering the Calcium Carbonate Precipitation Potential (CCP).
 - Prevents scaling in pipes, pumps, and membranes.
- **Adsorptive Media (e.g., GAC):**
 - Removes trace organic compounds, pesticides, and micropollutants.
 - Improves taste and odor.
 - Can complement nano-filtration or RO when present

6.3 Water Treatment Technology Options

6.3.1 Reverse Osmosis (RO)

- **Principle:** Uses high-pressure (40–100 bars) to force water through a semipermeable membrane, removing almost all salts.
- **Challenges:** Very high energy demand and costly management.
- **Suitability:** Not appropriate for Somalia's current utility and energy conditions.

6.3.2 Nano-Filtration (NF) – Recommended Option

- **Principle:** Filters water through membranes with nano-pores, removing 85–90% of sulphates, carbonates, and heavy metals.
- **Outcome:** Produces potable water with residual salt content of **600–800 mg/L**, within acceptable drinking water limits.
- **Operating pressure:** ~5 bars.
- **Advantages:** Lower energy demand, simpler operation, manageable by local technicians (ODMAN Co.).

6.4 Conclusion

Table 6-1: Treatment Option Comparison

Criteria	Option A – Conventional Groundwater Treatment	Option B – Advanced Nano-Filtration
Capital Cost	Low to Moderate (simple equipment: aerators, sand filters, UV units)	High (membranes, high-pressure pumps, control systems)
Operating Cost	Low (mainly electricity for pumps and periodic media replacement)	Moderate to High (membrane replacement, higher energy demand)
Energy Demand	low (1–2 bars pressure, small pumps)	Moderate (≈5–7 bars pressure, continuous pumping)
Water Quality Output	Effective for low-salinity water: removes iron, manganese, pathogens, particulates; may not reduce salts	Produces potable water from brackish sources: reduces 85–90% of salts, heavy metals, sulfates, pathogens
Salinity Reduction	Minimal – not suitable for high TDS water	Significant – residual salt 600–800 mg/L (within WHO standards)
Technical Complexity	Low – simple operation, easy to train local staff	Higher – requires trained operators, more advanced maintenance
Suitability	Only if fresh or slightly brackish sources are found	Recommended – applicable to existing brackish groundwater
Long-Term Reliability	High (robust, low-maintenance) but limited by water salinity	High if properly maintained; dependent on power supply and spare parts availability

- Option **A** is cheaper and easier, but **not effective** if South Galkayo's water is strongly brackish.
- Option **B** is more expensive and complex, but **actually works for South Galkayo's conditions**.

7. ASSESSMENT OF ENVIRONMENT AND SOCIAL IMPACTS

7.1 Introduction

This chapter identifies the potential environmental impacts resulting from the proposed project activities. The nature of impacts on the identified resources and receptors are categorized as either positive or negative, direct or indirect, long term or short term. The purpose of this assessment is to identify the significant impacts and to determine the appropriate measures to mitigate the negative impacts and to enhance the positive impacts. Significant impacts are defined as being those that:

- Relate to protected areas or to historically and culturally important areas
- Area of public concern and importance
- Trigger subsequent secondary impacts
- Elevate the risk of life-threatening situations

7.2 Project Positive Impacts

Project positive impacts during construction phase are summarized below.

- **Employment Creation:** At construction stage workers will be deployed to help in construction and land preparation activities. This will include both skilled and unskilled personnel especially from the local population with approximately 200 direct and indirect jobs.
- **Income/Revenue to Government:** Income to government will be realized in terms of taxes generated during the acquisition of relevant statutory licenses which include but are not limited to Water Services License, EIA License, Business permit, Operators permit among others. Materials to be used during construction will also be taxable. Through revenues generated, the government will be capable of financing its responsibility to her citizens.
- **Income to Other Businesses:** During implementation of the project, there will be need for transporters, suppliers of raw materials and other service providers, who will benefit from the proposed development.

7.2.1 Water Supply - Operation phase positive impacts

- **Availability of water for domestic use,** the project will ensure a reduction in the distance between the various households and the water collection points as compared to the long distances initially covered from the homesteads to water points.
- **Reduction in poverty levels of many households,** this will be as a result of the availability of reliable water for domestic use, households will therefore engage more time in other income streams.
- Employment opportunities will be created both to those working directly along the

pipeline route under the water and sanitation department.

- **Improved public hygiene and sanitation** and at home because of water availability.

7.3 Construction Phase Negative Impacts

- A summary of negative impacts of the proposed project include; Impact on water resources
- Impact on soil resources
- Impact on air quality
- Impact on noise and vibration
- Impact on flora and fauna

7.3.1 Impacts on Water Resources

Galkayo municipality, located within Galmudug state which has mainly groundwater-fed boreholes and shallow wells. The Project activities will either indirectly or directly interact with these water reservoirs through sedimentation and possible pollution from raw materials and oil spillage from machinery during construction.

Potential Impacts

Project activities on WTP installation listed above will interact with water resources within the Project area highlighted above in the following ways.

- Site activities such as excavations could result to loosening of soils that could result to sedimentation and siltation that in turn affect the water reservoirs.
- There will be direct interaction from the abstraction of water from surface water bodies for construction (e.g. for dust control).
- Un-serviced plant and equipment on site could result to oils and fuels leaks that could contaminate water resources.
- The nature of the construction activities of the proposed WTP will render the soils susceptible to agents of erosion subsequent siltation of rivers and stream along the Water aquifers. The small magnitude of this impact on surface water quality and the low sensitivity of the rivers to increased turbidity means the significance of this impact is assessed as minor.

Pre- Mitigation Impact Assessment is presented in the table below

Table 7-1: Pre-Mitigation Impact Assessment

Impact		Siltation and pollution of Surface Waters Resources		
Nature of Impact		Negative	Positive	Neutral
		Eroded soil and leaked oils and fuels entering groundwater-fed boreholes and shallow wells		
Type of Impact		Direct	Indirect	Induced
		Impact is a result as a direct interaction between Project activities and the		

	environment along the footprint of the water alignments.			
Duration of Impact	Temporal	Short term	Long term	Permanent
	The impact is expected to be short term, however in the case of serious erosion the impacts of siltation of surface water may be experienced long term (into the operational phase).			
Impact Extend	Local	Regional	International	
	The impact will be limited to the footprint of the Water alignment and immediate surrounds. The dilution of sediments in the river will render this impact negligible at the regional scale			
Impact scale	The impact is considered as small (local) scale.			
Frequency	Continuous			
Livelihood	Possible			
Impact magnitude	Positive	Negligible	Small	Medium
	Based on the above the impact magnitude is considered small.			
Resource / receptor sensitivity	Low	Medium	High	
	The sensitivity of the rivers along the proposed WTP to Siltation and pollution is considered to be medium to low.			
Impact significance	Negligible	Minor	Moderate	Major
	Considering the impact magnitude is small and the sensitivity is medium to low, the overall significance is considered to be minor			

Mitigation

The following mitigation measures will be implemented to minimize the potential for siltation and sedimentation of surface water by soils eroded from construction sites

- Activities shall be conducted > 100 m away from water bodies, except where crossings are required.
- All waste water which may be contaminated with oily substances must be managed in accordance with an appropriate Waste Management Plan (WMP).
- No hydrocarbon-contaminated water may be discharged to the environment.
- At construction stage, the contractor will prepare Specific Construction Environment and Social Management Plan (C-ESMP) which included among other; *Soil and Sedimentation Control Plan, Spoil Management Control Plan and Waste Management Plan.*

Residual Impact

The implementation of the proposed mitigation measures reduces the significance of the residual impact to negligible from minor within water bodies identified. The table below presents residual impact significance following mitigation measures

Table 7-2: Residual Impact Significance

Impact	Project Phase	Significance	Residual Impact
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		(Pre-mitigation)	Significance (Post-mitigation)
Availability and Quality of Water Resources (groundwater-fed boreholes and shallow wells)	Construction	Minor	Negligible

7.3.2 Impacts on Soil Resources

Baseline

The dominant soil type in Galkayo is shallow sandy and/or stony soils and deeper calcareous soils, with the central part of Somalia also having moderately deep loamy soils high in calcium carbonate or gypsum. The region features Vertisols on clay plains and is subject to moisture stress, low fertility, and potential salinity

Potential Impacts

The excavation of soil for the construction of water lines will disrupt the soil cohesion and also may result in surplus soil due to the installation of water pipes within the same excavated trenches. If not properly restored or managed, such soils may be eroded off. Temporary soil stockpiles established during construction of infrastructure will be at risk of erosion from wind and rainfall. Soil contamination as a result of possible oil and fuel leaks from un-services plant and equipment on site is also a potential impact.

Impact Assessment

The table presents Pre- Mitigation Impact Assessment.

Table 7-3: Pre-Mitigation Impact Assessment

Impact	Soil Erosion during Construction			
Nature of Impact	Negative	Positive	Neutral	
	Loss of soil cohesion contributing to erosion.			
Type of Impact	Direct	Indirect	Induced	
	Impact is a result as a direct interaction between project activities and the environment along the footprint of the project.			
Duration of Impact	Temporal	Short term	Long term	Permanent
	The impact is expected to be short term, however in the case of serious erosion the impacts may be experienced long term.			
Impact Extend	Local	Regional	International	
	The impact will be limited to the footprint of the project and immediate surrounds.			
Impact scale	The impact is considered as small (local) scale.			
Frequency	Continuous			

Livelihood	Possible				
Impact magnitude	Positive	Negligible	Small	Medium	Large
	Based on the above the impact magnitude is considered small.				
Resource / receptor sensitivity	Low		Medium		High
	The sensitivity of the rivers along the proposed WTP to erosion is considered to be medium to low.				
Impact significance	Negligible		Minor	Moderate	Major
	Considering the impact magnitude is small and the sensitivity is medium to low, the overall significance is considered to be minor				

Mitigation

The following mitigation measures will be implemented to minimize the potential for soil erosion:

- Vegetation clearing and topsoil disturbance will be minimised.
- Contour temporary and permanent access roads / laydown areas so as to minimise surface water runoff and erosion.
- Sheet and rill erosion of soil shall be prevented where necessary through the use of sand bags, diversion berms, culverts, or other physical means.
- Topsoil shall be stockpiled separate from subsoil. Stockpiles shall not exceed 2 m height, shall be located away from drainage lines, shall be protected from rain and wind erosion, and shall not be contaminated.
- Wherever possible construction work will take place during the dry season.
- Topsoil shall be evenly spread across the cleared areas when reinstated.
- Accelerated erosion from storm events during construction shall be minimised through managing storm water runoff (e.g. velocity control measures).
- Soil backfilled into excavations shall be replaced in the order of removal in order to preserve the soil profile.
- Spread mulch generated from indigenous cleared vegetation across exposed soils after construction
- At construction stage, the contractor will prepare Specific Construction Environment and Social Management Plan (C-ESMP) which included among other; *Soil and Sedimentation Control Plan, Spoil Management Control Plan and Waste Management Plan.*

Residual Impact

The implementation of the proposed mitigation measures reduces the significance of the residual impact to negligible from minor along the entire water lines alignment. The table below presents residual impact significance following mitigation measures

Table 7-4: Residual Impact Significance

Impact	Project Phase	Significance	Residual Impact
--------	---------------	--------------	-----------------

		(Pre-mitigation)	Significance (Post-mitigation)
Loss of soil resources due to erosion	Construction	Minor	Negligible

7.3.3 Impact on Air quality within the Air – Shed.

Baseline

As provided by Air quality index (AQI¹) and PM_{2.5} air pollution in Somalia, the ambient air quality status of South Galkayo is summarized in **Tables 7.5 and 7.6** below.

Table 7-5: Ambient Particulate Matter (PM_{2.5} and PM₁₀)

Peri Urban Centers in Somalia	Parameter	Concentration (µg/m ³)	Guideline (µg/m ³) ¹
	Particulate matter ≤2.5 (pm _{2.5})	15 to 20	35
	Particulate matter ≤10 (pm ₁₀)	20 to 35	100

Table 7-6: Ambient NO_x SO_x, CO₂ and O₃

Peri Urban Centers in Somalia	NO ₂		SO ₂		CO		O ₃	
	Conc. (ppm)	EMC AQR guide 2014 (ppm)	Conc. (ppm)	EMC AQR guide 2014 (ppm)	Conc. (mg/m ³)	EMC AQR guide 2014 (mg/m ³)	Conc. (ppm)	EMC AQR guide 2014 (ppm)
	<0.01	0.5	0.011	0.191	0.07	10.0	0.015	0.12

Activities associated with the Project including machineries and equipment's are not anticipated to generate significant volumes of gases emissions to warrant this impact assessed as significant

Potential Impacts

The following would be expected during construction.

- Emissions of oxides of nitrogen (NO₂ in particular) mainly from construction-related vehicles (and to a lesser degree from construction generators and other hydrocarbon powered equipment); and
- Dust and particulate matter (as PM₁₀) created by construction-related vehicle traffic on unpaved roads.

Impact Assessment

The assessment identified a list of receptors including churches, schools, markets and health facilities that could be affected by polluted air as a result of Project Activities that

¹ Environmental Protection Agency (EPA) National Ambient Air Quality Standards (NAAQS)

release SO_x, NO_x Co and O₃ and PM₁₀ and PM_{2.5}

Pre- Mitigation Impact Assessment in **Table 7-7 below.**

Table 7-7: Pre-Mitigation Impact Assessment

Impact		Degradation of the Air-shed during Construction					
Nature of Impact	of	Negative		Positive		Neutral	
		Increase in airborne pollution.					
Type of Impact	of	Direct		Indirect		Induced	
		Impact is a result as a direct interaction between project activities					
Duration of Impact	of	Temporal		Short term	Long term	Permanent	
		The impact is expected to be temporary as emissions arise throughout the construction phase.					
Impact Extend		Local		Regional		International	
		The impact will be limited to the footprint of the project and immediate surrounds.					
Impact scale		The impact is considered as small (local) scale.					
Frequency		Intermittent – impacts will typically only arise during working hours					
Livelihood		Inevitable					
Impact magnitude		Positive		Negligible	Small	Medium	Large
		Based on the above the impact magnitude is considered medium.					
Resource / receptor sensitivity		Low		Medium		High	
		The sensitivity of human receptors is Medium in dwellings and settlements					
Impact significance		Negligible		Minor	Moderate	Major	
		Dust emissions have the potentially to have Moderate significant impacts at nearby sensitive human receptors.					

Mitigation

As general measures for all locations:

- Regular dust suppression through water spraying on dusty roads and worksites
- Undertake monitoring close to dusty activities, noting that this may be daily visual inspections, or passive/active monitoring as parameter
- Undertake inspections to ensure compliance with the Dust Management Plan;
- Plan potentially dusty activities so that these are located as far from receptors as feasible;
- Erect solid screens if feasible around stockpiles and concrete batching;
- Avoid run off of mud and water and maintain drains in a clean state;
- Remove dusty materials form site as soon as possible if not being re-used. If being re-used, cover or vegetate if possible;
- Impose speed limits on haul routes and in construction compounds to reduce dust generation;

- Minimise drop heights when loading stockpiles or transferring materials; and
- Expose the minimum area required for the works, and undertake; and exposure on a staged basis to minimise dust blow.

Residual Impact

With the implementation of suitable mitigation and with adequate monitoring, residual impacts associated with dust and PM₁₀ from construction activities are **Negligible** as presented in the table below

Table 7-8: Residual Impact Significance

Impact	Project Phase	Significance (Pre-mitigation)	Residual Impact Significance (Post-mitigation)
Road Traffic Exhaust Emissions	Construction	Negligible	Negligible
Dust and PM from construction activities	Construction	Moderate	Negligible

7.3.4 Impacts related to Noise and Vibration

Baseline

World Bank Group General EHS Guidelines provide guidance on acceptable noise levels based on WHO standards and these are set out in **Table 7-8** on **Page 64**.

Table 7-9. World Bank Group Noise Level Guidelines

	Maximum Allowable Ambient Noise Levels, LAeq,1hr, dBA Free field	
	Daytime	Night-time
	07:00 – 22:00	22:00 – 07:00
Residential, institutional, educational	55	45
Industrial, commercial	70	70

Impact Assessment

Potential Impact

The assessment identified a list of receptors including churches, schools, markets and health facilities that could be affected by excessive noise beyond recommended World Bank Group Guidelines.

Pre-mitigation Impact Assessment is presented in **Table 7-11**.

Table 7-10: Pre-Mitigation Impact Assessment

Impact	Noise during Construction				
Nature of Impact	Negative		Positive		Neutral
	Elevated noise levels from operation of construction equipment.				
Type of Impact	Direct		Indirect		Induced
	Impact is a result of noise generated by construction activities.				
Duration of Impact	Temporal	Short term	Long term	Permanent	
	Impacts are expected to be short term (up to one month) at any individual water line within each of the target drainage area.				
Impact Extend	Local		Regional		International
	The impact will be limited to the footprint of the project and immediate surrounds.				
Impact scale	The impact is considered as small (local) scale.				
Frequency	Impacts may occur during daytime periods over a short-term duration at each water line alignment.				
Livelihood	Inevitable				
Impact magnitude	Positive	Negligible	Small	Medium	Large
	Based on the above the impact magnitude is considered negligible to small.				
Resource / receptor sensitivity	Low		Medium		High
	Dwellings are considered to have a high sensitivity to noise				
Impact significance	Negligible		Minor	Moderate	Major
	Considering the impact magnitude is small to negligible and the sensitivity is high, the overall significance is considered to be minor				

Mitigation

The following standard mitigation measures will be employed

- Siting noisy plant and equipment as far away as possible from human settlement, and use of barriers (e.g. site huts, acoustic sheds or partitions) to reduce the level of construction noise at receptors wherever practicable;
- Where practicable noisy equipment will be orientated to face away from the nearest Human settlement and other receptors;
- Working hours for significant noise generating construction work (including works required to upgrade existing access roads or create new ones), will be daytime only;
- Alternatives to diesel and petrol engines and pneumatic units, such as hydraulic or electric-controlled units, will be used, where practicable;
- Where practicable, stationary equipment will be located in an acoustically treated enclosure;
- For machines with fitted enclosures, doors and door seals will be checked to ensure they are in good working order; also, that the doors close properly against the seals;
- Throttle settings will be reduced and equipment and plant turned off, when not being used;
- Equipment will be regularly inspected and maintained to ensure it is in good working order. The condition of mufflers will also be checked; and fitting of mufflers or

silencers of the type recommended by manufacturers.

Residual Impact

Residual Impact Significance is presented in Table 7-12 on Page 66.

Table 7-11: Residual Impact Significance

Impact	Project Phase	Significance (Pre-mitigation)	Residual Impact Significance (Post-mitigation)
Noise from construction activities affecting nearby dwellings	Construction	Minor	Negligible

7.3.5 Impacts on Flora

Baseline

Galkayo Somalia falls within Arid and Semi-Arid (ASALs) zone within ecological zone V-VI. Zone V receives rainfall between 300mm-600mm annually and is characterized by low trees, grass and shrubs while zone VI receives annual rainfall of 200mm to 400mm. The Project area which is estimated to cover roughly 1-2 hectares receives an average of 240mm of rainfall per year, the rainfall is erratic and short making it unfavorable for vegetation growth. However, the area was once covered exhibits arid characterizes with dominant species noted as cactus family and Acacia sp including; Acacia species (*A. mellifera*, *A. tortilis*), Commiphora spp., Dobera glabra, Boscia coriacea.

Potential Impact

There are **not** protected vegetation cover within the water treatment plant that is considered a fragile ecosystem, sensitive to changes to its components. Pre mitigation Impact Assessment is presented in Table 7-13 below.

Table 7-12: Pre-Mitigation Impact Assessment

Impact	Flora and Vegetation during Construction			
Nature of Impact	Negative		Positive	Neutral
	Disturbance to vegetation cover along the Water alignment.			
Type of Impact	Direct		Indirect	Induced
	Impact is as a result of a direct interaction between the project (i.e. Construction activities) and the existing vegetation along the water and sewer lines			
Duration of Impact	Temporal	Short term	Long term	Permanent
	The effect is considered permanent as the areas where vegetation will be removed for the construction of the line will have to be permanently kept with vegetation for maintenance purposes during the operational phase			
Impact Extend	Local		Regional	International
	The impact will be limited to the footprint of the project and immediate surrounds.			

Impact scale	The impact is considered as small (local) scale.				
Frequency	Once off				
Livelihood	Inevitable				
Impact magnitude	Positive	Negligible	Small	Medium	Large
	Based on the above the impact magnitude is considered negligible				
Resource / receptor sensitivity	Low	Medium		High	
	The WTP will be constructed with minimal disturbed or modified environment therefore the sensitivity is considered low.				
Impact significance	Negligible	Minor	Moderate	Major	
	Considering the impact magnitude is negligible and the sensitivity is low, the overall significance is considered to be negligible				

Mitigation

The following standard mitigation measures will be employed

- Avoidance of impacts should be prioritised. However, if not possible then compensatory planting of trees that will be cut by the contractor during excavation of water pipeline trenches will be undertaken.
- Vegetation shall only be cleared along the Water alignment only if the vegetation and will interfere with Project construction and/or present a hazard.
- Areas to be cleared shall be agreed and demarcated before the start of the clearing operations to minimize exposure.
- Stage vegetation clearance is also recommended so as not to clear the entire corridor all at once.
- The use of existing cleared or disturbed areas for the Contractor's Camp, stockpiling of materials etc. shall be encouraged.
- Whenever possible, all damaged areas shall be reinstated and rehabilitated upon completion of the contract to as near pre-construction conditions as possible.
- Rehabilitation of temporary construction sites and pioneer camps (if needed) should be done as swiftly as possible and always with suitable native grasses and other plants

Residual Impact

Residual Impact Significance is presented in the table below

Table 7-13: Residual Impact Significance

Impact	Project Phase	Significance (Pre-mitigation)	Residual Impact Significance (Post-mitigation)
Disturbance to vegetation cover	Construction	Negligible to Minor	Negligible

7.4 Waste Management on Site

Wastes on Site will include both liquid and solid wastes,

Liquid Wastes that will be associated to the project

- Cleaning and maintenance water from tanks, pumps, and filters.
- Minor spills of fuels, oils, and lubricants during construction.

Solid Wastes that will be associated to the project

- Excavated soil, sand, gravel, and debris from construction.
- Packaging materials (plastic, cardboard) and construction offcuts.
- Used personal protective equipment (PPE).
- Minor metal scraps and broken tools.
- Routine institutional wastes

Such wastes will be managed as summarized below;

- The contractor shall develop a comprehensive Waste Management Plan (WMP) prior to commencement of works
- Properly labelled and strategically placed waste disposal containers shall be provided at all places of work
- Litter bins should have secured lids to prevent animals and birds from scavenging
- All personnel shall be instructed to dispose of all waste in a proper manner
- Recycling of construction material shall be practiced where feasible e.g. containers and cartons
- Earth spoils shall be disposed of in pre-identified sites
- Water containing pollutants such as concrete or chemicals should be directed to a conservancy tank for removal from the site where applicable
- Potential pollutants of any kind and form shall be kept, stored and used in a manner that ensures no escape
- In case of any form of pollution, the contractor should notify the Resident Engineer (RE)
- Wash areas shall be placed and constructed in a manner that ensures the surrounding areas including groundwater are not polluted
- No grey water, runoff or uncontrolled discharges from the site or working areas to any adjacent Storm water channels.

7.5 Social Resources and Receptors

7.5.1 Workers, Community Health Safety and Security

Baseline

The Assessment recorded receptors that could be exposed due to Project activities. The risks will be to both; (i) Project Workers, (ii) School Children and Students and (iii) General Community Members

Some of the receptors recorded included;

- Hawlwadaag IDP School

- Calanely IDP School
- Residential areas

The proposed boreholes would be in close proximity to above receptors with an average radius of 1.5km.

Potential Impact

The presence of the Project could affect the health, safety and wellbeing of the communities along the proposed water alignment routes including increased project-related traffic during site preparation including site clearance and excavation works and inappropriate waste handling or disposal, and accidental leaks and spills could result to be below listed risks.

- Accidents associated with plant and equipment movement around the project area or open unbarricaded trenches or without warning tapes.
- Air pollution beyond thresholds provided by national legislations
- Noise and excessive vibrations beyond the levels provided by national legislations
- Drowning risks to school children and community Members who might trip and fall into trenches that have percolated runoff water.
- Cave-Ins- The greatest danger in trenching and excavation is cave-ins. Unstable soil and inadequate shoring or sloping can lead to sudden collapses, burying workers and causing serious injuries or fatalities to workers
- Falls and Falling Loads: Workers or equipment near the edge of a trench can fall in, leading to injuries. Additionally, tools, machinery, or materials can fall into the trench, posing risks to those working inside.
- Utility Strikes; Contact with underground utilities, such as electrical cables, internet, or water mains, can cause severe injuries or disrupt services leading to community unrest and grievances
- Equipment-Related Accidents, heavy machinery used for digging or transporting materials can create additional risks, such as accidental contact with workers or trench edges

Impact Assessment

Pre-mitigation Impact Assessment is presented in **Table 7-15** below.

Table 7-14: Pre-Mitigation Impact Assessment

Impact	Community Safety and Environment Health			
Nature of Impact	Negative		Positive	Neutral
	ESHS risks to Community and Workers			
Type of Impact	Direct	Indirect		Induced
	Impact that result from a direct interaction between the Project (i.e. increased plant and equipment traffic) and the local population along the water and sewer lines.			
Duration of Impact	Temporal	Short term	Long term	Permanent
	The increased traffic effect and risks to injuries is temporary, as construction activities will take place in a sequential manner during the length of the construction period			
Impact	Local	Regional		International

Extend	The impact will be limited to the footprint of the project and immediate surrounds.				
Impact scale	The impact is considered as small (local) scale.				
Frequency	The frequency is considered to be occasional or one time at each temporary along the Water Lines over the duration of the construction phase.				
Livelihood	Inevitable				
Impact magnitude	Positive	Negligible	Small	Medium	Large
	Based on the above the impact magnitude is considered negligible to small.				
Resource / receptor sensitivity	Low		Medium		High
	The sensitivity of the receptors (local population around the WTP and road users including vehicle users, pedestrians and cyclists) is considered medium.				
Impact significance	Negligible		Minor	Moderate	Major
	Considering the magnitude and sensitivity are medium, the impact on the community safety during construction activities is considered to be of moderate significance.				

Mitigation

- Conduct a Pre-Work Assessment, assess the soil type, weather conditions, and proximity to structures or utilities. Identify potential hazards and plan the excavation accordingly.
- Use Protective Systems, implement appropriate protective systems, such as: (i) Shoring: Positioning supports to prevent soil movement. (ii) Shielding: Creating interior trench boxes to protect workers and (iii) Sloping: Cutting back trench walls at an angle to reduce collapse risk.
- Inspect Trenches Daily, a competent person should inspect trenches daily and after events like rainstorms or vibrations to ensure continued stability.
- Maintain Safe Access and Egress, provide ladders, ramps, or other safe means of entry and exit in trenches that are four feet or deeper. Always place these within twenty-five feet of workers, for deep cut provide reinforced cage for workers.
- Stay Aware of Utility Locations: Use "Call Before You Dig" services to locate and mark underground utilities before excavation begins.
- Monitor Hazardous Atmosphere, test the air quality inside trenches over four feet deep for oxygen levels, toxic gases, and flammable atmospheres. Use ventilation if necessary.
- Control Water Accumulation, use pumps or diversion systems to keep water out of the trench. Avoid working in trenches with standing water unless proper precautions are taken.
- Secure the Site, keep heavy equipment and materials away from trench edges. Install barriers and warning signs to protect workers and prevent accidental falls.
- Train Workers, ensure all workers are trained in trench safety, recognizing hazards, and responding to emergencies.
- Ensure that work sites are fenced and that signs are put up around work fronts and construction sites advising people of the risks associated with trespass. When work fronts are less than 10 metres from a community or house, employ security guards from the local community to prevent trespass.

Residual Impact

The significance of the residual impacts on community health and safety after the implementation of mitigation measures is presented in **Table 7-19** below.

Table 7-15: Residual Impact Significance

Impact	Project Phase	Significance (Pre-mitigation)	Residual Impact Significance (Post-mitigation)
ESHS risks to Community and Workers	Construction	Moderate	Minor

7.5.2 Children Protection

The possibility of contractor children abuse is through hiring of child labour, also labour force on site might abuse children within the Project area through sexual advances that could lead to early pregnancies and school dropout, including exposure to communicable diseases such as HIV and AIDS. The contractor will undertake the below listed mitigation measures.

Mitigation Measures

- The contractor will develop and implement a Children Protection Strategy that will ensure minors are protected against negative impacts associated by the Project including SEA.
- All staff of the contractor must sign, committing themselves towards protecting children, which clearly defines what is and is not acceptable behaviour
- Wherever possible, ensure that another adult is present when working in the proximity of children.
- Not invite unaccompanied children to workers home, unless they are at immediate risk of injury or in physical danger.
- Refrain from physical punishment or discipline of children
- Refrain from hiring children for domestic or other labor, which is inappropriate given their age, or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury.
- Comply with all relevant local legislation, including labor laws in relation to child labor specifically provisions of Somalia's Employment Act Cap 226 of 2007 Part VII on protection of children against exploitation

7.5.3 Sexual Exploitation and Abuse (SEA)

This impact refers to sexual exploitation and abuse committed by Project staff against communities and represents a risk at all stages of the Project, especially when employees and community members are not clear about prohibitions against SEA in the Project.

Mitigation Measures

- Develop and implement a SEA action plan with an Accountability and Response Framework as part of the C-ESMP. The SEA action plan will follow guidance on the World Bank's Good Practice Note for Addressing Gender-based Violence in Investment Project Financing involving Major Civil Works (Sept 2018).

- Prevention of SEA: including COCs and ongoing sensitization of staff on responsibilities related to the COC and consequences of non-compliance; project-level IEC materials;
- Response to SEA: including survivor-cantered coordinated multi-sectoral referral and assistance to complainants according to standard operating procedures (SOP); staff reporting mechanisms; written procedures related to case oversight, investigation and disciplinary procedures at the project level, including confidential data management;
- Engagement with the community: including development of confidential community-based complaints mechanisms discrete from the standard GRM; mainstreaming of Sexual Exploitation and Abuse (SEA) awareness-raising in all community engagement activities; community-level IEC materials; regular community outreach to women and girls about social risks and their SEA-related rights;
- Management and Coordination: including integration of SEA in job descriptions, employments contracts, performance appraisal systems, etc.; development of contract policies related to SEA, including whistle-blower protection and investigation and disciplinary procedures; training for all project management; management of coordination mechanism for case oversight, investigations and disciplinary procedures; supervision of dedicated PSEA focal points in the project and trained community liaison officers.

7.6 Operation Phases Negative Impacts

7.6.1 Water Treatment Plant Operational Impacts

The most significant challenges currently facing WTP systems are aging infrastructure, increasing demand for potable water, maintaining potable water quality, weakened infrastructure as a result of system inefficiencies, Microbial Growth, Biofilms and Sediments, Disinfectants and Disinfection Byproducts, Nitrification, Corrosion, Permeation and Leaching and Water Losses and Main Breaks which will be addressed by the water treatment and supply departments at the operation stage of the Project.

7.6.2

8. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN (ESMP)

8.1 C-ESMPs and Sub Plans

The contractor upon signing of civil works contract will prepare Construction Environmental and Social Management Plans (C-ESMPs) and Sub Plans for review and approval. **Table 8-1** below presents details of Sub plans.

Table 8-1: C-ESMPs and Subplans

#	C-ESMPs and Sub Plans	Preparation Stage	Responsibility	Estimated Cost (USD)
1	C-ESMP	After signing of Works Contract	Contractor	
2	GBV/SH/SEA	After signing of Works Contract	Contractor	
3	Campsites Management Plan	After signing of Works Contract	Contractor	
4	Labor Management Plan	After signing of Works Contract	Contractor	
5	Labor Influx Management Plan	After signing of Works Contract	Contractor	
6	Water Resources Protection Plan	After signing of Works Contract	Contractor	
7	Waste Management Plan	After signing of Works Contract	Contractor	
8	Traffic Management Plan	After signing of Works Contract	Contractor	
9	Drug Abuse and Substance Awareness Plan	After signing of Works Contract	Contractor	
#	Approximate Cost			1500

8.2 Licenses and Permits (Occupational Health and Safety Related).

The contractor will be required to comply to below listed provisions as required by Occupational Health and safety provisions as detailed in the table 8.2 below.

Table 8-2: Permits and Licenses

#	Permits and Licenses	Preparation Stage	Responsibility	Estimated Cost (USD)
1	Workplace registration certificates from DOSH	After signing of Works Contract	Contractor	

2	Fire clearance certificates from DOSH – Ministry of Labor and Social Services Somalia	After signing of Works Contract	Contractor	
3	Additional Statutory requirements, as per OSHA Act • Risk Assessment • Safety and Health Audit • Fire Safety Audit	Within the 1 st Quarter of Works	Contractor	
4	Development and implementation of Policies required at the Work place • Safety & Health Policy • Fire Safety Policy • Environment Policy	Within the 1 st Quarter of Works	Contractor	
5	Personnel Trainings Required • Fire marshal training • Statutory: First Aid Training • Statutory: Safety and Health Committee	After signing of Works Contract	Contractor	
6	Occupational Health Programmes at Workplace • Statutory Medical Examinations. • Pre-employment • Periodical • post-employment (exit medical checkup)	After signing of Works Contract	Contractor	
7	Operations Safety: • All plants, lifting equipment and machinery inspected • Inspection of ladders / scaffoldings	Monthly	Contractor	
8	Permit to Works (PTW) are required for non-routine hazardous work.	Whenever required	Contractor	
9	Fire Safety Requirements: • Fire drill • firefighting equipment • Fire escapes	Bi Annually	Contractor	
10	Emergency Response Plan Required: • Injury emergency response; • Non-entry rescue mission to persons in confined space; • Fire emergency response;	One off	Contractor	
	Approximate Cost			2000

8.3 Purpose and Objectives of ESMP

The specific objectives of the ESMP are to:

- Serve as a guiding document for the environmental, health and safety monitoring activities during construction and operation of the Water Lines.

- Provide detailed specifications for the management and mitigation of activities that have the potential to impact negatively on the environment, health and safety of workers and community.
- Provide instructions to relevant personnel regarding procedures for protecting the environment and minimizing environmental effects, thereby supporting the operator's goal of minimal or zero incidents.

The Environmental, Social Management and Monitoring Plan (ESMP) is summarized in the **table 8.3 on Page 80**.

Table 8-3: Environment and Social Management Monitoring Plan – Construction Phase – Water Treatment Plant Works

Risk / Aspect	Anticipated Impact	Mitigation Measures	Responsibility	Monitoring Parameter	Budget (USD)
Impacts on Water Resources (installation of pipelines, site drainage)	Contamination, disruption of drainage	Proper pipeline alignment; install silt traps; no waste dumping in water sources	Contractor, Supervising Engineer	Water quality checks; drainage condition	4,500
Impacts on Soil Resources (excavation, stockpiling, compaction)	Erosion, loss of topsoil, contamination	Stockpile topsoil; erosion control; safe fuel/oil storage	Contractor, EHS Officer	Area disturbed vs. footprint; evidence of erosion; spill records	5,000
Impacts on Air Quality (dust, machinery exhaust)	Dust nuisance, respiratory impacts	Water spraying; cover stockpiles; maintain equipment	Contractor, EHS Officer	Dust levels (visual); service logs; complaints	3,500
Noise & Vibration Impacts (machinery, vehicles, excavation)	Nuisance to communities/workers	Restrict works to daytime; maintain equipment; provide ear protection	Contractor, Clerk of Works	Noise readings; PPE use; complaints	2,500
Impacts on Vegetation Cover (site clearance, pipeline trenches)	Vegetation loss, habitat disturbance	Minimize clearance; avoid unnecessary removal; restore disturbed areas	Contractor, District Environmental Office	Area cleared vs. design; restoration evidence	3,000
Community Health, Safety & Security (traffic, open trenches, hazards near communities)	Accidents, restricted access, conflicts	Fence sites; provide signage; traffic management plan; awareness sessions	Contractor, Local Administration	Records of accidents; fencing/signage present; grievance log	5,500
Worker Health & Safety (machinery, excavation, hazardous tasks)	Accidents, injuries, unsafe exposure	Provide PPE; training; enforce protocols; emergency preparedness	Contractor, Supervising Engineer	Incident records; PPE provision; training logs	6,500
Workers' Management (labor influx, GBV/SEA risks, conflict with locals)	Strain on services, GBV/SEA incidents, tension	Hire locally; enforce Code of Conduct; GBV/SEA awareness and reporting	Contractor, District Labor Office	% local hires; GBV/SEA cases resolved; grievances	5,500
Construction Waste Management (solid, liquid, hazardous waste)	Pollution, soil/water contamination	Segregate waste; provide bins; licensed hauler; prohibit open burning	Contractor, Local Authority	Waste disposal records; site condition	4,000
Chance Finds (archaeological/cultural remains)	Loss of cultural heritage	Train workers; stop work & notify authorities	Contractor, Supervising Engineer	Records of chance finds & actions taken	1,000
					41,000

8.4 Decommissioning Plan

The Project has been designed to operate effectively for over 30 years. In the event that the infrastructure will be required to be overhauled, then the following steps should be considered in order to undertake the procedure in a structured manner with minimum impact to both human and natural environment.

Table 8-4: Decommissioning Flow Chart

#	Action	Actor
Step 1	Initiation Development of an Objective Worksheet and checklist incorporating references, legal, stakeholder engagement and policies Undertake decommissioning audit	Proponent
Step 2	Prepare Road Map for Decommissioning Design Conduct design review to validate elements of the design and ensure design features are incorporated in the decommissioning design. Public consultations	Proponent
Step 3	Prepare and Award Contract Prepare a contract that incorporates validated project information and award to a contractor as per the Procurement rules.	Proponent
Step 4	Execute Decommission Works Implement design elements and criteria on the Project in accordance with specifications and drawings. Inspect during decommissioning and at Project completion to ensure that all design elements are implemented according to design specifications.	Contractor
Step 5	Non-Conformance, Corrective/Preventive Action Determine root cause Propose corrective measures Propose future preventive measures	Proponent

8.5 Monitoring Plan

The final stage in the impact assessment process is the development of a Management Plan for implementing controls and mitigation and monitoring the effectiveness. Monitoring is done to verify that: a) impacts or their associated Project components remain in conformance with applicable standards; and b) mitigation measures are effectively addressing impacts and compensatory measures and offsets are reducing effects to the extent predicted.

All the activities to be financed under the Project will follow the AfDB ISS, Ministry of water and Environment will make sure that all bid documents and contracts include the ESMP and require compliance with it. Environmental and social monitoring seeks to check the effectiveness and relevance of mitigation measures through the implementation/operation phase. Environment and Social focal points shall monitor Project activities as detailed in the table

8.6

on

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Table 8-5: Monitoring Plan – During Construction Phase

MATERIAL MEASURES AND ACTIONS		TIMEFRAME	RESPONSIBLE ENTITY
MONITORING AND REPORTING			
A	REGULAR REPORTING Prepare and submit to AfDB regular monitoring reports on the environmental, social, health and safety (ESHS) performance of the Project, status of preparation and implementation of E&S instruments required, stakeholder engagement activities, and functioning of the grievance mechanisms.	Submit quarterly E&S reports to the AfDB throughout the first year of Project implementation commencing after the Effective Date and biannually thereafter throughout Project implementation.	Galwaaq Water Company
B	INCIDENTS AND ACCIDENTS Promptly notify the AfDB of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers, including, inter alia, cases of sexual exploitation and abuse (SEA), sexual harassment (SH), and accidents that result in death, serious or multiple injuries. Provide sufficient details regarding the scope, severity, and possible causes of the incident or accident, indicating immediate measures taken or that are planned to be taken to address it, and any information provided by any contractor and/or supervising entity, as appropriate	Notify the Association within 48 hours after learning of the incident or accident using such reporting formats as the Association may specify. A detailed report of the incident shall be provided within fifteen (15) days of notifying the Association of the incident or accident, unless a different timeline is agreed with the Association.	Galwaaq Water Company
C	CONTRACTORS MONTHLY REPORTS Require contractors and supervising firms to provide monthly monitoring reports on ESHS performance in accordance with the metrics specified in the respective bidding documents and contracts and submit such reports to the Association.	Submit the monthly reports to the Association as annexes to the reports to be submitted under action A above.	Contractor and Supervising Engineer

ESS 1: ASSESSMENT AND MANAGEMENT OF ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS			
1.1	ORGANIZATIONAL STRUCTURE Establish and maintain an organizational structure within the MOECC with qualified staff and resources to support management of ESHS risks and impacts of the Project including one full-time environmental and social specialist.	Establish and maintain E&S staff no later than four weeks after the Effective Date and maintain throughout Project implementation.	Galwaaq Water Company
1.2	ENVIRONMENTAL AND SOCIAL INSTRUMENTS Prepare, disclose, consult upon, adopt Stakeholder Engagement Plan (SEP) Prepare, disclose, consult upon, adopt and implement site-specific Environmental and Social Impact Assessments (ESIAs), Environmental and Social Management Plans (ESMPs)	ESIA and SEP shall be prepared, disclosed, consulted upon and adopted before Effective Date, and thereafter implemented throughout Project implementation.	Galwaaq Water Company
ESS 2: LABOUR AND WORKING CONDITIONS			
2.2	GRIEVANCE MECHANISM FOR PROJECT WORKERS Establish, maintain, and operate a grievance mechanism for Project workers, as described in the LMP and consistent with OS 10.	Establish grievance mechanism prior to engaging Project workers, and thereafter maintain and operate it throughout Project implementation.	Galwaaq Water Company
2.3	OCCUPATIONAL HEALTH AND SAFETY (OHS) MEASURES Develop and implement occupational, health and safety (OHS) measures, based on World Bank EHS Guidelines, and ESMPs including through, <i>inter alia</i> , implementing adequate OHS measures and incorporating LMP and SEA/SH requirements into the ESHS specifications of the procurement documents and contracts with contractors and supervising firms.	Measures to be operational prior to engaging Project workers.	Galwaaq Water Company
ESS 3: RESOURCE EFFICIENCY AND POLLUTION PREVENTION AND MANAGEMENT			
3.2	RESOURCE EFFICIENCY AND POLLUTION PREVENTION AND MANAGEMENT Resource efficiency and pollution prevention and management measures shall be	Prepare Construction Specific Environmental and Social	Contractor

	incorporated in the ESMPs to be prepared under the project	Management Plans	
ESS 4: COMMUNITY HEALTH AND SAFETY			
4.1	TRAFFIC AND ROAD SAFETY Incorporate measures to manage traffic and road safety risks as required in the ESMPs to be prepared	Prior to commencement of civil works	Contractor
4.2	COMMUNITY HEALTH AND SAFETY Assess and manage specific risks and impacts to the community arising from Project activities [, including, inter alia,] [specify any areas of risks that may require emphasis, e.g., behaviour of Project workers, risks of labor influx, response to emergency situations], and include mitigation measures in the ESMPs	Prior to commencement of civil works	Contractor
4.3	SEA AND SH RISKS Adopt and implement a SEA/SH as part of the C-ESMP, to assess and manage the risks of SEA and SH.	Prior to commencement of Project Activities	Contractor
ESS 8: CULTURAL HERITAGE			
8.1	CHANCE FINDS Describe and implement the requirements including Chance Finds procedures and site-specific ESMPs. This procedure shall be followed if cultural heritage is encountered during Project activities. Ensure relevant workers shall be trained in the requirements of the procedure prior to ground disturbance during actual construction work.	Prior to commencement of Project Activities	Contractor
ESS 10: STAKEHOLDER ENGAGEMENT AND INFORMATION DISCLOSURE			

10.1	STAKEHOLDER ENGAGEMENT PLAN (SEP) PREPARATION AND IMPLEMENTATION Prepare a Stakeholder Engagement Plan (SEP) for the Project, consistent with OS 10, which includes measures to, inter alia, provide stakeholders with timely, relevant, understandable and accessible information, and consult with them in a culturally appropriate manner, which is free of manipulation, interference, coercion, discrimination and intimidation. The Recipient shall conduct additional stakeholder consultations targeting communities and other disadvantaged groups and update the SEP and thereafter implement the SEP throughout project implementation.	SEP prepared, disclosed, and adopted.	Galwaaq Water Company
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9. GRIEVANCE REDRESS MECHANISM

9.1 Purpose of GRM

9.1.1 Purpose of Grievance Redress Mechanism (GRM)

The purpose of the Greivance Redress Mechanms (GRM) is to offer project stakeholders an opportunity to seek and receive grievance redress and strengthen project's team to identify, track, resolve and refer eligible grievances thereby enhancing project's efficiency and development results and outcomes. The GRM further provides guidance, guidelines and modalities for managing and addressing grievances that may emerge from SERP implementation process. The GRM framework provides modalities for raising awareness,visibility, and understanding of the project interventions and providing feedback on its implementation

The AfDB Integrated Safeguards System (ISS) require that bank supported projects facilitate mechanisms that address concerns and grievances that arise in connection with a project. The ISS 10 (Stakeholder Engagement and Information Disclosure) provides under one of the objectives that project-affected parties are provided with accessible and inclusive means to raise issues and grievances, and allow borrowers to respond and manage such grievances.

As good practices, this GRM makes the following distinctions:

- **Project-related complaints and grievances:** it focuses on Project-related complaints and grievances and defines the different steps of handling such;
- **GBV/SEA/SH related complaints and grievances:** complaints and grievances relating to Gender-Based Violence (GBV) / Sexual Exploitation and Abuse (SEA) / Sexual Harassment (SH), given their sensitivities and considerations related to a survivor-based approach, are reported to the available GRM grievance recipients, but the grievances follow a different process.
- **Labor-related complaints and grievances:** Complaints from project workers raising workplace concerns, terms of employment and other related concerns will be registered through the Workers' GRM, which is a separate GRM elaborated in this document;
- **Second tier / escalated complaints and grievances:** This concerns complaints and grievances that cannot be solved by the first tiers (Project-wide and workers' complaints and grievances) or have been escalated by users dissatisfied with the resolutions from the first tiers. This GRM describes procedures how these grievances shall be addressed through an appeals mechanism.

9.2 Objectives of GRM

The primary purpose of the GRM is to ensure the collect and address the complaints or the concerns of aggrieved parties to a fair extent and on time. Dissatisfaction can cause an aggrieved party to act beyond expectations, which would culminate in some unforeseen repercussions that would negatively affect project implementations and stall project progression. Consequently, the Project's GRM will seek to achieve the following objectives:

- Encourage registration, acknowledgment, and recording of all concerns or issues raised by aggrieved;
- Ensure that complaints are properly registered, tracked and documented, with due regard for confidentiality;
- Address the composition of a committee that would handle all grievances; Inform people of the public information center establishment and access;
- Establish procedures for the GRM to enhance easy access, transparency and accountability, and tackle escalation of grievances beyond expectations;
- Manage the concerns raised by aggrieved parties to achieve a win-win situation within a reasonable time frame that would comply with national and international best practices; and
- Record all resolutions agreed upon by all parties involved and ensure that aggrieved persons are satisfied with every outcome of remedial resolution to foster harmony during project implementation.

The GRM is expected to contribute to continuous improvement in performance of the SERP through an analysis of trends and lessons learned. The GRM does not prevent access to judicial and administrative remedies. It is designed in a culturally appropriate way and is able to respond to all needs and concerns of project-affected parties

9.3 GRM Core Principles

The GRM is based on six core principles summarized below:

- **Fairness:** Grievances are treated confidentially, assessed impartially, and handled transparently.
- **Objectiveness and independence:** The GRM operates independently of all interested parties in order to guarantee fair, objective, and impartial treatment in each case. GRM officials have adequate means and powers to investigate grievances (e.g., interview witnesses, access records).
- **Simplicity and accessibility:** Procedures to file grievances and seek action are simple enough that PAPs can easily understand them. Project PAPs have a range of contact

options including, at a minimum, a telephone number. The GRM is accessible to all stakeholders, irrespective of the remoteness of the area they live in, and their level of education or income. The GRM does not use complex processes that create confusion or anxiety.

- **Responsiveness and efficiency:** The GRM is designed to be responsive to the needs of all complainants. Accordingly, staff handling grievances are trained to take effective action, and respond quickly to grievances and suggestions.
- **Speed and proportionality:** All grievances, simple or complex, are addressed and resolved as quickly as possible. The action taken is swift, decisive, and constructive.
- **Participation and social inclusion:** A wide range of PAPs, including community members, members of vulnerable groups, project implementers, civil society, and the media, are encouraged to bring grievances and comments to the attention of the Project staff. Special attention is given to ensure that marginalized or vulnerable groups, including those with special needs, are able to access the GRM

9.4 GRM Framework

9.4.1 Grievance Category

Grievances will be categorized using the guidance summarized below, including basic information communication; public administration ethics and conduct; governance; human rights; environmental compliance; corruption and economic crimes. Grievances outside the SERP mandate will be referred to the appropriate statutory institution. The table below summarized

Table 0.1 Categories of Grievances

#	Categories of Grievances	Federal Republic of Somalia Provisional Constitution 2012 Provisions
1	Basic information	Article 32
	Access to information	
2	Ethics and conduct	Article 115 to 119
	Government entities and staff	
	Implementing Partner staff	
3	Violation and breach of codes of ethics	Article 115 to 119
	Violation of codes of ethics;	
4	Breach of the code of ethics by government officers:	Article 115 to 119
	Breach of Code of Conduct and Ethics by staff of Implementing Partners	

5	Violation of human rights and fundamental freedoms	Article 111B
	Gender equality and general equality matters.	
	Equality and freedom from discrimination (Equality -every person; Equality of men and women to opportunities in political, economic, cultural and social)	
	Economic and Social Rights (health, sanitation, freedom from hunger, adequate and quality food, clean safe and adequate water, social security, education, emergency medical treatment)	
	Non-discrimination of special needs groups	
6	Corruption and Economic crimes	Article 111C
	Unethical conduct	
7	Labor and working conditions	Article 24
	Termination/Summary Dismissal,	
	Breach of Employment Contract Terms	
	Conflicts with Trade Unions	
	Work Injury	
	Discrimination	
	Sexual Harassment	

Figure 0.1 Categories of Grievances

9.4.2 GRM Provisions

All project affected persons will be informed of their rights to raise grievances pertaining to national GRM frameworks. Mechanisms are put in place to ensure that grievances are recorded and considered fairly and appropriately. Project management will issue and publicize a grievance redress policy that clearly states that management embraces grievance reports and views them as opportunities for project improvement and identified a guiding principle; defining the scope and types of grievances to be addressed; setting out a user- friendly procedure for lodging grievances; outlining a grievance redress structure; describing performance standards; and spelling grievance review mechanisms.

The GRM will be a project wide GRM and will work inter-connectedly with local level actors at the FMS, community, District, and municipal levels. This is to ensure that all measures are taken to address the grievance. The GRM will be housed at both Ministry of Finance (MoF) at Federal Government of Somalia (FGS) and provide access to SERP stakeholders and contractors to register complaints received at sub-project level or the field.

At the project level, a Grievance Redress Committee (GRC) will be established and will comprise, legal advisor, gender specialist, environmental and social safeguard specialists of the project. Local, state and municipality level GRC that consists of local leaders, municipal representatives, community-based organizations, Legal advisor and law enforcement will be established after the first of the project or once the construction activities start. This GRC will be headed through a consensual appointment done with affected communities, and steps will be taken to ensure that all grievances are properly documented and transferred to the digital platform for tracking of resolution.

The project shall explore and collaborate with existing network of service providers to setup and ethically manage SEA/SH complaints as documented in the separate GBV and SEAH Action Plan. Detailed structure of the GRM for the project workers will be finalized and described in the LMP and project implementation manual.

9.5 GRM Implementation Steps

The GRM structure provides multiple channels to aggrieved parties to file their grievances and receive feedback with regards to the project. The aggrieved party must be able to select the most efficient institution, the most accessible means of filing a grievance, and must be able to circumvent partial stakeholders in the Project, which may be implicated in the complaint. He or she must further be able to bypass some grievance channels that are perceived as potentially not responsive or biased.

STEP 1: Identification of Focal Person

The SERP management will identify experienced (Focal Points) at all levels of their projects and assign them responsibility for handling (receiving and registering) grievances. GRMs can have multiple focal points to receive and register grievances. This GRM is designed to give the aggrieved parties access to seek redress to their perceived or actual grievance using this mechanism or other existing mechanisms such as the National legal system (i.e. Courts), mediation boards (elders), GRCs and traditional systems (village courts). It is equally important to have someone who has overall responsibility for tracking and following up on issues and complaints raised. The descriptions of the GRM functions should clearly stipulate the official designations and the roles of the focal points so that they can really be held accountable for performing their functions. The GRM for the SERP will have identified the focal point persons from community to national level and their tasks have been formulated.

At community level, the project grievance redress structure will be linked and interface to the existing traditional authority structure as this already provides for resolving conflicts in the communities. This will ensure accessibility to the GRM as the traditional structures are close to

the people. The Focal Person will be someone with knowledge of the local and/or official language of communication and should be able to record the grievances where need be.

The Project will implement training program to teach staff, Focal Points, community members and other stakeholders how to handle grievances and why the GRM is important to the project's success. This training should include information about interacting with beneficiaries about grievances, the organization's internal policies and procedures in relation to grievance redress. It will also be useful to establish or build on local and community based GRMs by providing grievance redress training for stakeholders at the local level. This greatly reduces GRM costs while enhancing beneficiary satisfaction with, and ownership of, the grievance redress process.

STEP 2: Registration of Grievances:

A register of grievances which will be held by the GRM Officer or any other appointed person by the project. The Aggrieved Party (AP) must register their grievances with the GRM focal point.

To register the grievance, the contractors and suppliers will provide information to the GRM focal point to be captured in the Grievances Registration Form as presented in the annex. The GRM will accept complaints from the APs submitted through verbal, email, phone, Facebook, WhatsApp, meeting or letter to the office of the GRM, in English or local language. The focal point persons handling grievances will transcribe verbal submissions. Receipt of grievances shall be acknowledged as soon as possible, by letter or by verbal means.

When a complaint is made, the GRM will acknowledge its receipt in a communication that outlines the grievance process; provides contact details and, if possible, the name of the GRM officer who is responsible for handling the grievance; and notes how long it is likely to take to resolve the grievance. Complainants will receive periodic updates on the status of their grievances. This GRM has established clearly defined timetables for acknowledgment and follow-up activities. And to enhance accountability, these timetables will be disseminated widely to various stakeholders, including communities, civil society, and the media.

Means of Filing a Grievance

Diverse methods for reporting grievances that are culturally appropriate are to be used and they should permit for self-identified, confidential, or anonymous procedures (professional letter writers, suggestion boxes, Email, toll-free telephone etc).

Avenues for verbal complaints are:

- Complaints to members of the local Grievance Redress Committee (GRC)
- Social Safeguards & Communications desks at the SERP -PCU
- Open community mediation sessions
- Operators' Customer Care Unit
- Town hall meetings

Avenues for written complaints are:

- Complaint Boxes in the community, operator's office or by hand
- Letters or Email to the SERP-PCU
- Dedicated telephone lines shall include:
- SERP -PCU hotlines
- Operator Costumer Care hotlines

STEP 3: Assessment and Investigation:

This step involves gathering information about the grievance to determine its validity and resolving the grievance. The merit of grievances should be judged objectively against clearly defined standards. Grievances that are straight forward (such as queries and suggestions) can often be resolved quickly by contacting the complainant.

Having received and registered a complaint, the next step in the complaint-handling process is for the focal points to establish the eligibility of the complaint received. The Grievances Registration Officer once a complaint or grievance is registered shall within 5 days assess the registered complaint or grievances to determine its validity and relevance i.e. is it within the scope of the SERP-GRM as defined in this document. The following criteria can be used to assess and verify eligibility:

- The complainant is affected by the project.
- The complaint has a direct relationship to the project.
- The issues raised in the complaint fall within the scope of the issues that the GRM is mandated to address.

Having completed the complaint assessment, a response can be formulated on how to proceed with the complaint. This response should be communicated to the complainant. The response should include the following elements:

- Acceptance or rejection of the complaint
- Reasons for acceptance or rejection
- Next steps – where to forward the complaint

- If accepted, further documents and evidence required for investigation e.g. field investigations

Once the registered grievance or complaint has been determined as falling within the scope of this GRM, the focal point shall investigate the complaint. Investigation of the complaint may include the following:

- On site visit and verification.
- Focus Group discussions and interviews with key informers.
- Review of secondary records (books, reports, public records); and
- Consultations with local government and traditional authorities.

The PCU GRM Committee will ensure that investigators are neutral and do not have any stake in the outcome of the investigation. At the end of the field investigation, the GRM officer shall compile a Grievance Investigation Report (GIR) using a standard template as provided in annex on the outcomes of the investigations and the specific recommendation to resolve the grievance or complaint.

STEP 4: Recommendation and Implementation of Remedies:

After the investigations, the GRM officer shall inform the AP of the outcome of the investigations and the recommended remedies if any. The AP shall be provided with written response clearly outlining the course of action the project shall undertake to redress the grievances and the specific terminal date by which the recommended remedies shall be completed. Potential actions will include responding to a query or comment, providing users with a status update, imposing sanctions, or referring the grievance to another level of the system for further action. The project will take some action on every grievance. If the recommended remedy involves monetary compensation, the GRM must then seek the approval of the Grievance Committee through the SERP project coordinator.

The Aggrieved Party shall, provide a response agreeing or disagreeing with the proposed course of action within a minimum reasonable period after receiving the recommended actions.

STEP 5: Referral to the State Office:

In the likely event that the AP is not satisfied with the recommended remedy. The GRM officer shall forward the copy of Grievance Registration Form (GRF) and the Grievances Investigation Report (GIR) to the State GRM focal point (SFP).

The SFP shall once has received the GRF and the GIR from the District must conduct own investigations and complete his own GIR and communicate to the AP within 30 working days (i.e. repeat stages 2-3). The SFP in his recommendation shall take into consideration the reasons why the AP rejected the remedies offered by the district GRM focal point. He may decide to offer the same remedies as the GRM officer or different and improved offer.

Once the SFP has concluded the investigations and communicated to the AP. The AP shall have 7 days or less to agree or disagree with the proposed remedies. If the AP is agreeable to the remedy the SFP shall ensure that the remedy is implemented within the agreed time frame. For a remedy that requires monetary compensation the SPF submit the information to the relevant government department(s).

STEP 6: Referral to the Grievances Committee:

When the AP disagrees with the recommendation of the SFP, the SFP shall within 7 days of receiving the notice of rejecting the offer from the AP compile all the necessary documents regarding the grievance from district and the province to the Grievance Committee through the grievance Chairperson who will be elected by the Committee.

The government implementing partners at the national level shall investigate the matter further and taking into consideration the recommendation of the coordinator and PCU. The Environmental and Social safeguards Officers shall compile the GIR and submit to the Grievance Committee for consideration. Once the Grievance Committee arrives at a decision it is the responsibility of the SERP to implement the remedies within the agreed time. If the AP disagrees with the remedy offered by the Grievance Committee, the AP reserves the right to appeal to other external GRMs outside SERP.

The above-described steps and timeframes will be followed to address grievances emanating from implementing of project activities. For grievances that need quick and urgent attention, the described steps will be adhered to. However, in terms of timeframe, the grievances will be addressed in the shortest feasible period based on case-to-case basis.

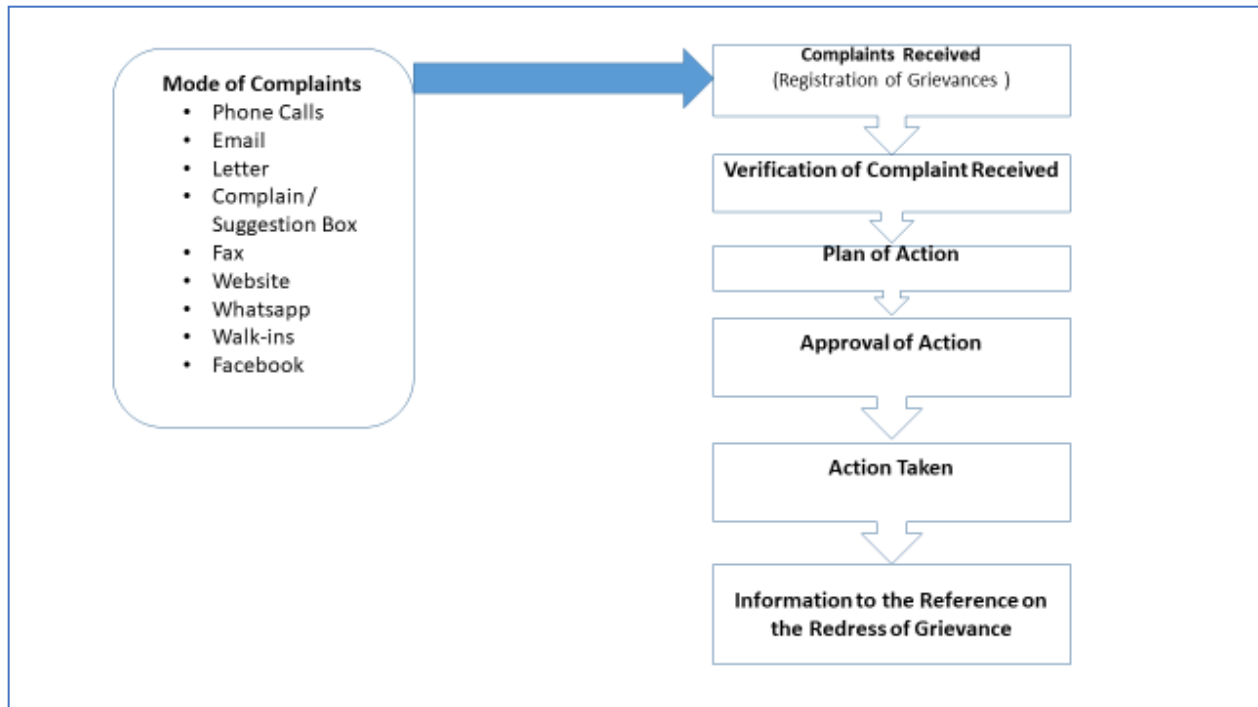


Figure 0.2 Grievance Flow in Basic GRM

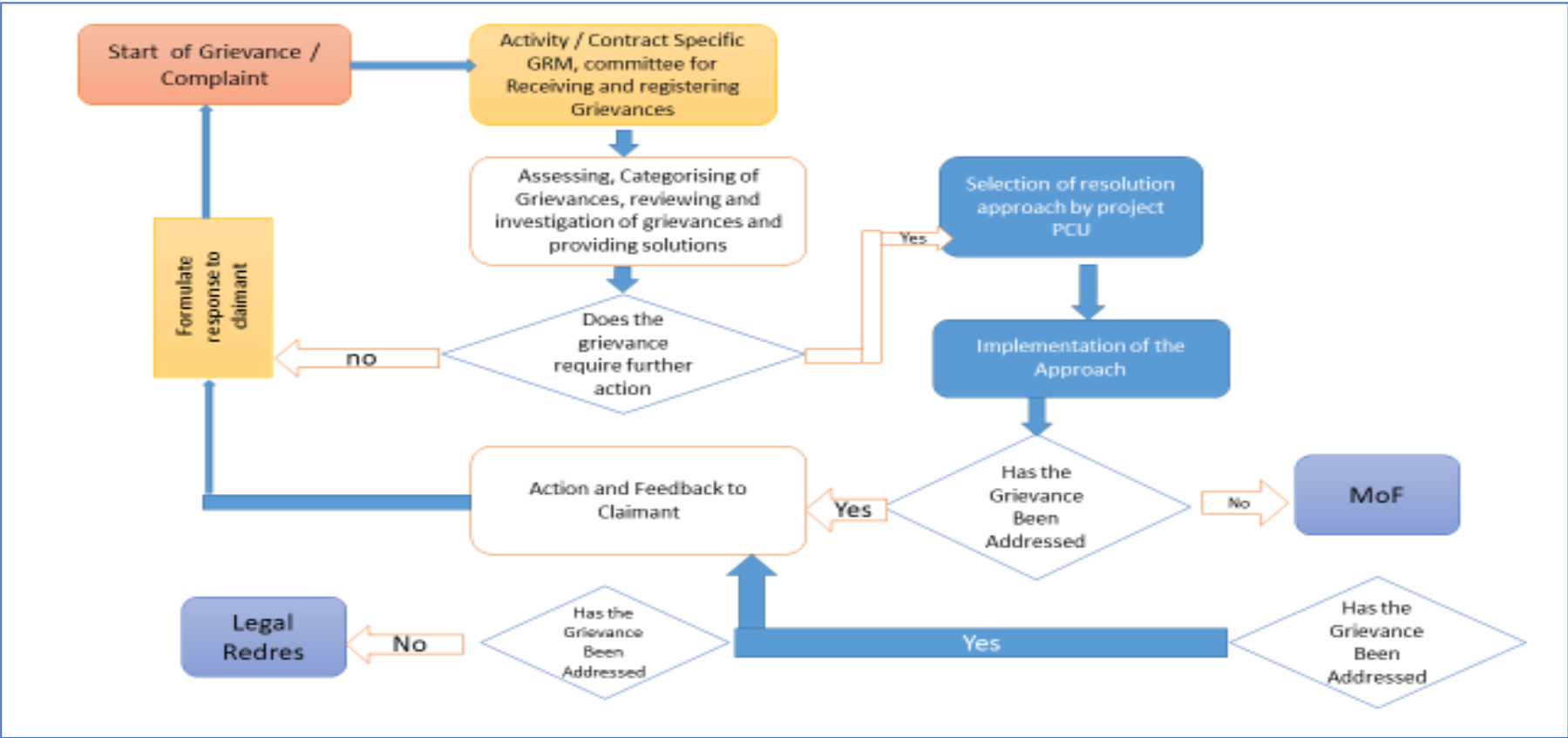


Figure 0.3 Detailed GRM Flow Chart

9.6 Institutional Responsibilities

- **Contractor:** First line of response for construction-related grievances (noise, dust, safety).
- **Galakayo Municipality:** Coordination and oversight of local grievances.
- **Puntland Ministry of Environment:** Oversight of environmental and ESIA-related complaints.
- **AfDB:** Safeguard monitoring and final appeal body for unresolved grievances.

9.7 Monitoring and Reporting

- Quarterly reports on number of grievances received, resolved, and pending.
- Disaggregated data (by gender, age, vulnerable groups).
- Annual review of GRM effectiveness with AfDB and Puntland authorities.

9.8 Budget for GRM Implementation

Item	Estimated Cost (USD)
Establishment of complaint desks	500
Training of GRM focal points	1,000
Communication materials (posters, radio, leaflets)	1,000
Monitoring, reporting & community feedback sessions	500
Total GRM Budget:	3,000 USD

9.9 Conclusion

The GRM is a vital safeguard tool to ensure that the project is implemented in an inclusive, transparent, and accountable manner. It promotes community trust, prevents conflict, and ensures compliance with both Somali legal frameworks and AfDB's ISS (2023) requirements

10.FINDINGS AND PROVISIONS

10.1 General Outcome of the Assessment

10.1.1 Positive Impacts Identified

- **Improved Water Quality:** Safe and treated water for households, schools, and health centers, reducing waterborne diseases.
- **Strengthened Public Health:** Reliable water testing capacity in South Galkayo improves disease surveillance and outbreak response.
- **Institutional Capacity Building:** Establishing a monitoring laboratory enhances local technical capacity in water quality management.
- **Employment Opportunities:** Creation of short-term construction jobs and long-term operational positions.
- **Climate Resilience:** Improved water security supports adaptation to droughts and dry season shortages.

10.1.2 Medium and High Negative Impacts Identified

- **Water Resources (High):** Risk of contamination from construction wastewater, fuel, and chemicals.
- **Soil Resources (High-Medium):** Erosion and compaction during excavation and heavy equipment use.
- **Air Quality (Medium):** Dust emissions and machinery exhaust, especially during dry/windy conditions.
- **Noise and Vibration (Medium-Low):** Disturbance from drilling, mixing, and machinery operation.
- **Flora (Low):** Minor clearance of shrubs and grasses within the project site.

10.1.3 Trade-offs

- Higher upfront costs for semi-automated treatment technologies and laboratory equipment, but with long-term benefits of efficiency and water safety.
- Temporary construction nuisances (dust, noise, traffic disruptions) against the permanent improvement in water access, health, and resilience.
- Localized vegetation loss versus the greater community benefit of improved sanitation and water safety.

10.1.4 Mitigation Measures to Address Medium and High Impacts

- Proper containment and disposal of drilling wastewater, fuel, and chemicals.
- Soil stabilization measures (controlled excavation, re-vegetation after works).
- Dust suppression (water spraying, covering trucks).
- Limiting noisy works to daytime hours, using well-maintained equipment.
- Replanting trees/shrubs after site works to restore vegetation cover.

10.1.5 Contrast between Positive vs. Negative Impacts

- Positive impacts are long-term, widespread, and transformative, directly improving health, resilience, and institutional capacity.

- Negative impacts are localized, short-term, and manageable with proper mitigation measures.

The benefits clearly outweigh the adverse impacts, as the project will significantly enhance water security, public health, and environmental sustainability in South Galkayo.

10.2 Assessment Recommendations:

- The Bid documents prepared for the Project incorporate the Environment, Social Health and Safety Provisions discussed under Chapter 7 of this report (Environment and Social Impact Assessment and Mitigation Measures).
- The contractors through the support of ESHS officer will ensure that all workers sign Code of Conduct (CoC) before site deployment
- The supervising and contractor will undertake training of personnel on Environment, Social, Health and Safety matters tailored to the Project Scope prior to commencement of works
- The contractor will through the ESHS officer apply the provision of Environment and Social Management Toolkit (ESIRT) in management of incidences and accident's during project implementation stage
- The contractor will prepare monthly and quarterly reports on status of implementation of Environment and social compliance measures discussed in this report.
- Contractor will be required to commit to implementing the Environment, Social Health and Safety (ESHS) Provisions by (i) Hiring ESHS officers, (ii) Developing site specific (C-ESHS) and Sub Plans listed under Table 7-1 and (iii) Implement Provisions of the Plans and Undertake Monthly and Quarterly reporting of ESHS compliance.

10.3 Pre-Construction Safeguards Readiness

Permits and Licenses

- The Contractor shall ensure that all pertinent permits, certificates and licenses have been obtained prior to any activities commencing on site and are strictly enforced/adhered to
- Obtain the license in Department of Occupational Health and Safety Registration from Ministry of Labour and Social Services
- Reach out to Water Resources Authority (WRA) for the necessary approvals
- Obtain Approval of Plans from South Galkayo County Government Physical Planning Department for any structures on site
- Acquire Permits from Public Health Department (South Galkayo County) of sanitation facilities installed on site
- The Contractor shall maintain a database of all pertinent permits and licenses required for the contract as a whole and for pertinent activities for the duration of the contract

Engage ESHS Officers

- Prior to construction, the contractor will engage a qualified ESHS expert who will be responsible for below listed tasks
- Prepare and implement Construction Specific Environmental and Social Management Plan for the Project (CESMP)

- Train all staff on ESHS and ensure all staff sign Code of Conduct (CoC) prior to commencement of works.
- Report all accidents and incidents timely as required by World Bank Environment and Social Incident Reporting Tool kit (ESIRT)
- Audit of compliance with the environmental protection, and pollution prevention and control regulations;
- Monitor and report implementation of environmental mitigation measures;
- Monitor the compliance with the environmental protection clauses/specifications in the Contract;
- Investigate and evaluate complaints and identify corrective measures;
- Liaise with the Engineer on all environmental performance matters and timely submission of all relevant environmental monitoring reports;
- Advise the contractor on environmental improvement, awareness, enhancement matters, etc. on site; and
- Modify the ESMP and monitoring program in consultation with the Engineer if necessary throughout the period of works.

Preparation of C-ESMP and Sub Plan

The contractor upon signing of civil works contract will prepare Construction Environmental and Social Management Plans (C-ESMPs) and Sub Plans for review and approval by the implementation authority, a summary of the Sub Plans is presented below

- GBV/SH/SEA
- Campsites Management Plan
- Labor Management Plan
- Labor Influx Management Plan
- Water Resources Protection Plan
- Drug Abuse and Substance Awareness Plan

ESHS Training

The supervisor and contractor will undertake training of personnel on Environment, Social, Health and Safety matters tailored to the Project Scope prior to commencement of works

11.APPENDIXES

APPENDIX 1: STAKEHOLDER CONSULTATION (Minutes, Reports, List of Attendance)

**MINUTES OF PUBLIC PARTICIPATION FOR ESIA ON WATER SUPPLY PROJECT
SCOPES (WTP, WATER SUPPLY NETWORK & BOREHOLE CONSTRUCTION)
HELD ON 28TH MAY 2025 AT MAYORS OFFICE AREA IN SOUTH GALKAYO**

AGENDA ITEM	DISCUSSION POINTS
1. INTRODUCTION	Welcome and Opening Remarks The meeting commenced with the consultant welcoming all stakeholders to the consultation meeting for the proposed Water Supply Project in South Galkayo and giving an opportunity to all members present to introduce themselves. Purpose of Meeting: • To present the proposed water supply project to key stakeholders • To provide detailed information on project scope and implementation • To gather stakeholder input, concerns, and recommendations • To ensure community participation and ownership of the project.
2. PROJECT INFORMATION	Project Background: The consultant outlined the context and need for the water supply project in South Galkayo. The discussion highlighted current water access challenges, including limited availability of safe drinking water, long distances traveled for water collection, high rates of waterborne diseases, and vulnerability of existing water sources to seasonal variations and contamination. Project Objectives: • Increase access to safe and reliable drinking water for residents in South Galkayo. • Reduce waterborne diseases through provision of treated potable water. • Decrease time spent on water collection, particularly for women and children. • Establish sustainable water management systems with community participation • Improve overall public health and socio-economic conditions. The consultant informed the members present of the proposed project components as follows; Component 1: Borehole Drilling • 5No. new boreholes and rehabilitation of 7No. existing ones. Component 2: Water Treatment Plant (WTP) • There will be 2No. WTP; at Gahrey Primary and at Haar Haar IDP camp with a quality monitoring laboratory. • A total estimated production of 4000m³ per day from both WTPs. Component 3: Water Supply Network • There will be an inclusion of 25km water supply pipeline covering several areas in South Galkayo.

AGENDA ITEM	DISCUSSION POINTS
	Expected Benefits: • Reduced cases of water borne diseases outbreak. • Improved household water access. • Water quality meeting WHO drinking water standards • Reduction in water collection time. • Creation of several employment opportunities during construction.
3. QUESTION AND ANSWER SESSION	Q1: What measures will be put in place to ensure the sustainability of the water supply system after project completion? A1: A comprehensive sustainability plan will be implemented including establishment and training of a Water Management Committee with representation from community members, local government, and water user groups and Development of operation and maintenance manual and training of local technicians. Q2: How will the project ensure that women and vulnerable groups have equal access to water services? A2: The project incorporates gender and social inclusion principles whereby water points will be located considering safety and accessibility for women and persons with disabilities. Q3: What water quality standards will the treatment plant achieve, and how will quality be monitored? A3: The Water Treatment Plant is designed to produce water meeting WHO drinking water quality guidelines and Somalia national standards. Q4: What will be the water tariff, and how will it be determined? A4: The tariff structure is being developed through a participatory process involving assessment of actual operation and maintenance costs and will be guided by local WSP. Q5: Will there be employment and training opportunities for young people from the community? A5: Yes, the project is committed to local employment prioritizing hiring of local labor for construction activities including excavation, pipe laying, and civil works. General Discussion: Stakeholders expressed overall support for the project, emphasizing the critical need for improved water access in South Galkayo. Several participants shared experiences of current water challenges including health issues from contaminated sources, economic burden of water purchase, and impact on children's education due to time spent fetching water. Stakeholders requested regular updates on project progress and continued involvement in decision-making processes.
4. CLOSING REMARKS	Summary of Key Discussion Points: The consultant summarized the main outcomes of the meeting which included Strong stakeholder support for the water supply project confirmed, clear understanding of project scope, and components

AGENDA ITEM	DISCUSSION POINTS
	established. Vote of Thanks: The consultant expressed gratitude to all participants for their attendance, active participation, and valuable contributions. Special appreciation was extended to community members who traveled to attend the meeting. The commitment demonstrated by stakeholders reinforces the project's foundation for success and sustainability. Closing: The meeting was officially closed at with a closing prayer. Informal discussions continued among participants.

Attendance List

PREPARATION OF GENDER-SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO, SOMALIA

TOWN: SOUTH GALKAYO

ORGANIZATION: NATIONAL MISSING

VENUE: NATIONAL OFFICE, SOUTH GALKAYO

DATE: 22/05/2025

ATTENDANCE LIST

NO.	NAME	ORGANIZATION	PHONE NO.	EMAIL ADDRESS	SIGNATURE
1.	Almed Hassan Farah	Mozur	0618810260	Mudugorcelw@icm.so	Almed Hassan Farah
2.	Abdourahman she Hassan	Municipality	0615888981	galkayomayor@gmail.com	Abdourahman she Hassan
3.	Dr. Bakel Liban Mohamed	GOVERNMENT	613150508	liban@icm.so	Dr. Bakel Liban Mohamed
4.	Muhammad Abdur Abdur	Director Planning	615757577	Muhammad@gmail.com	Muhammad Abdur Abdur
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13.					

Appendix 2: Photographs Of Situations in Various Parts of South Galkayo



Pictorial views of South Galkayo Town



Hayaan Bacadweyn IDP community Centre



A household in the IDP camp



Sanitation facilities in the one of the camps



ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) STUDY REPORT FOR GALKAYO SOUTH WASH PROJECTS.

MINUTES OF ENVIRONMENTAL IMPACT ASSESSMENT (EIA) IMMEDIATE INTERVENTIONS- PUBLIC PARTICIPATION FORUM HELD 3rd TO 4th SEPT 2025 AT FIVE STAR HALL GALKAYO SOUTH.

MINUTES OF MEETING

<u>Item</u>	<u>Minutes</u>	<u>Action By</u>
1.	Introduction: Reason for Stakeholder Consultation The meeting commenced with opening remarks delivered by focal points from the Galkayo Municipality, representing the Departments of Public Works, Social Affairs, and district Council members. These representatives emphasized the importance of inclusive dialogue and collaboration between the local government, technical experts, and the community. Following the opening remarks, all participants were given the opportunity to introduce themselves, promoting transparency and encouraging open communication among stakeholders. The session then proceeded with the Consultant Engineer, Abdikani Dahir representing the Tertiary Consultant, who presented a clear overview of the meeting agenda including list of projects go to discuss their impacts. The Consultant welcomed all attendees and highlighted the key purpose of the stakeholder consultation – to gather meaningful input from community members and stakeholders regarding the potential environmental and social impacts of the proposed project. Participants were urged to actively contribute their views, concerns, and suggestions on both positive and negative impacts of the project. This feedback would play a critical role in: • Enhancing the design and implementation of mitigation measures, • Finalizing the engineering designs, and • Ensuring the project aligns with both community expectations and environmental sustainability. • Public private partnership (PPP) strategies The session reinforced the legal and policy basis for public participation as outlined in the Provisional Constitution of Somalia and the Somalia National Environmental Policy (2020), emphasizing transparency, inclusivity, and sustainability in environmental decision-making	
2.	<u>Project Information</u> The Tertiary Consultant representative Mr Abdikani Dahir thanked stakeholders for allocating time to come and participate in the ESIA public participation forum for Galkayo South WASH Project components. He gave a brief of the proposed Project scope as below bullets:	

Item	Minutes	Action By
	• The project encompasses a comprehensive range of activities aimed at improving water supply, sanitation, and hygiene infrastructure. These include the extension of new pipelines ranging from 200mm to 12.5mm in diameter, complete with all necessary fittings and appurtenances. It also involves the rehabilitation of the existing water network through the installation of chambers, air valves, washouts, junctions, and marker posts. Zonal and master meters will be supplied and installed at borehole sites and throughout the existing network, including appropriate chambers and markers. • In South Galkayo, guided by a groundwater study, new boreholes will be drilled and equipped, while existing boreholes will undergo rehabilitation, including the replacement of pumps. Solar panels will be replaced for existing boreholes and installed for new ones, alongside standby generators (110 Kva) to serve as backup for unreliable mains electricity. Water storage tanks with a cumulative capacity of up to 3000m³ will be constructed both at borehole sites and key town locations to ensure balanced water pressure distribution, based on hydraulic modelling. • A new adsorption-based water treatment plant (2000m³/day capacity) will be constructed at selected borehole sites, with an overall production target of 4000m³/day from two plants. Additionally, a water quality monitoring laboratory will be established and equipped with modern tools and machinery. • In terms of sanitation, two mobile desludging trucks (10m³ capacity each) and five manual desludging units will be deployed to empty overflowing latrines, especially in IDP camps. Emergency latrines and soak pits will be constructed in high-density and flood-prone areas. Furthermore, 100 units of septic tanks and soak pits will be constructed or rehabilitated in public areas and vulnerable communities. • To enhance long-term sanitation management, community awareness campaigns will be conducted, and decentralized wastewater treatment will be piloted at public institutions such as hospitals and schools. Community-led maintenance plans, including fee-based systems and the formation and training of Community Sanitation Committees, will be introduced. A Public-Private Partnership (PPP) strategic plan will also be developed for sustainable facility management. • Climate-resilient drainage and protection works will be implemented to safeguard sanitation infrastructure. The project will further include hygiene promotion campaigns, women empowerment and youth engagement initiatives, and engagement with engineering consultancy firms for specialized studies, monitoring, and certification. Lastly, the implementation of the Environmental and Social Management Plan (ESMP) will ensure compliance with environmental and social safeguards.	
3.	Potential Project Impacts (Both Positive and Negative) Positive Impacts The project is expected to deliver several important benefits to the Galkayo community. Improved water and sanitation infrastructure will enhance hygiene practices, reduce exposure to waterborne diseases, and address health issues caused by saline water, such as dental discoloration	

Item	Minutes	Action By
	and eye irritation. Access to safe water and sanitation will restore dignity, particularly for vulnerable populations in informal settlements and IDP camps, while also reducing the prevalence of Acute Watery Diarrhea (AWD). Better wastewater management and decentralized treatment systems will help protect groundwater from contamination. Women and girls will benefit significantly, as the burden of water collection and caregiving related to waterborne illnesses will be reduced. This creates more opportunities for education and economic participation. The project is also expected to increase land values and encourage better housing development. It will generate employment, with direct jobs during construction for both skilled and unskilled workers, and operational roles such as sewer operators later on. Finally, by replacing multiple unsafe water sources with a single, reliable, multipurpose supply system, the project will improve efficiency, reduce costs, and ensure long-term sustainability. Negative Impacts Despite the positive outcomes, the project may generate environmental and social risks. These include vegetation loss, soil degradation, and potential overuse or pollution of water resources. Socially, the influx of workers could strain local resources and services, while creating risks of child labor, gender inequality, teenage pregnancies, and school dropouts. Land acquisition and resettlement may displace vulnerable groups, such as IDPs, leading to loss of livelihoods. Construction activities may also cause noise, dust, air pollution, and occupational hazards, affecting both workers and nearby communities. Mitigation Measures To minimize risks, environmental impact assessment (EIA) recommendations and environmental management plans (EMPs) must be implemented. These should include reforestation, erosion control, and monitoring of water use to avoid over-extraction. A labor influx management plan and community awareness programs on health, gender, and education are recommended. Local labor should be prioritized, and contractors must follow fair labor standards. Health and safety risks can be mitigated by enforcing occupational safety standards, providing personal protective equipment (PPE), training workers regularly, and monitoring pollution levels with appropriate dust and noise control measures. Continuous monitoring and evaluation (M&E) will allow timely corrective actions, while a grievance redress mechanism will ensure community concerns are addressed. Alignment with Somalia's National Environmental Policy (2020) will further strengthen transparency, inclusivity, and sustainability in project implementation.	

Item	Minutes	Action By
4.	Wastewater Management and Decentralized Treatment Systems The selected site for the proposed wastewater management and decentralized treatment system is located at 6.7524N, 47.4524E. Proximity to health facility: The site is less than 200 meters north of a health centre constructed in 2024 by the Ministry of Health and Qatar Charity. During the months of May to August, prevailing winds blow southward, which means that odors from the treatment site will directly affect the health centre, undermining its function and exposing patients and staff to health risks. Proximity to IDP settlements: Over the past six months, more than 50 internally displaced households (IDPs) have settled on both sides of the proposed site, also within a 200-meter radius. The treatment site poses environmental and public health hazards to these already vulnerable communities. Nearby residential and community structures: To the west of the site are established residential homes, a large mosque, and the main Golol Road, which serves as a busy community access route. The placement of the system here risks causing odor nuisance and contamination concerns for daily commuters and worshippers. Key Concern The proposed site location is unsuitable due to its close proximity to critical social infrastructure (health center, mosque, residential homes) and newly established vulnerable IDP households. If implemented at this location, the plan will create negative health and social impacts, particularly during the windy season when odors will spread toward the health facility and surrounding residents. Proposed Mitigation To relocate current health centre, IDPs settlement and stop town growing towards this direction or to assign another location for this project.	
5.	Any Other Business (AoB). Collaboration & Ownership: Maintain close collaboration with government institutions, local authorities, and community representatives to strengthen long-term ownership, accountability, and sustainability of interventions. Land Acquisition: Recognize that all identified lands are privately owned. There is a need for clearer and transparent rules governing both private and public interests to avoid disputes and ensure fair, inclusive decision-making.	
6.	Closing Remarks Director of Social affairs and Training Department for Local Authority Farah Abdulkadir said “I would like to sincerely thank all participants for their valuable contributions to today’s meeting. I extend my deepest appreciation to our donor, the African Development Bank, for their continued support, to UNICEF as the implementing partner, and to the consultant team from Tertiary Engineers for their tireless efforts in guiding and supporting this important initiative. As we close, I urge all stakeholders to expedite the implementation of the planned projects so that the people of Galkayo South may begin to	

<u>Item</u>	<u>Minutes</u>	<u>Action By</u>
	benefit from improved WASH services as soon as possible. Together, through our collaboration and commitment, we can ensure the success of these vital projects and deliver lasting impact to our community.	

**Minutes Prepared by:- Abdikani Dahir, water specialist and civil engineer at Galkayo South,
Signed and stamp**





SAMPLE PHOTOS OF THE MEETING HELD GALKAYO

Attendance Lists



PREPARATION OF GENDER SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO, SOMALIA

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) IMMEDIATE INTERVENTIONS- PUBLIC PARTICIPATION

ATTENDANCE LIST

Venue: Fire star Hotel Date: 03-04/09/2015

#	Name	Village	Tel	Sign
1	Abdulkadir Ali Alphonse	Caraf wadn	618207788	Alphonse
2	Bashir Eshu g. seg.	Caraf wadn	616699143	Bashir
3	Mohamed Ali g. seg.	Caraf wadn	619103420	Mohamed
4	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
5	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
6	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
7	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
8	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
9	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
10	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
11	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
12	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
13	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
14	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
15	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
16	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
17	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
18	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
19	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
20	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii
21	Abd. gadii cal. maxed	Caraf wadn	612957747	Abd. gadii





PREPARATION OF GENDER SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO, SOMALIA

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) IMMEDIATE INTERVENTIONS- PUBLIC PARTICIPATION

ATTENDANCE LIST

Venue: Hotel Five Star Date: 23-04/2025

#	Name	Village	Tel	Sign
22	AHMED HASSAN Farah	Galkayo - Mower	0618623121	AH
23	Shefiir Abdulkadir Shire	Galkayo youth	0615061602	Sh
24	Mohamed Abdulkadir Shire	Galkayo water	0615020926	M
25	HAJI AHMED AHMED MOHAMED	Galkayo youth	0616221491	AH
26	Alii Mohamed Hoshi	Galkayo water	0615196614	Ali
27	Liban Said Ali	Galkayo - WATER WORKS	0615184498	Lib
28	Abdulkadir Shire Cigal	Eldas	0615077030	Sh
29	Murays Abdullahi Siyad	Business	0614399212	Mur
30	Yusuf Abdurrahman Ali	Eldas	0615788748	Yus
31	Abdirisak Tahlii Jimale	Eldas	0612749489	Ab
32	Ali Abdulle portalle	Eldas	0618038023	Ali
33	Farhan Mohamed Farah	Business	0612749491	Far
34	Mohamed Aschir Ali	youth	06145883158	M
35	Abdirisak Urur Jibara	Mower	0612685102	Ab
36	Zakariye Amiin Hynes	Mower	0614176008	Zak
37	Dahir Nuri Ali	Business	0615024240	Dh
38	Xaawo Ahmed Hassan	WOMEN Group	0619336878	Xa
39	Murad Aden Ali	WOMEN Group	0619824562	Mur
40	Nasir Ali Ibrahim	WOMEN Group	0614830880	Nas
41	Dahir Hassan Ali	WOMEN Group	0613423466	Dh
42	Hassan Mohamed Sahel	WOMEN Group	0615199477	H





PREPARATION OF GENDER SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO, SOMALIA

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) IMMEDIATE INTERVENTIONS- PUBLIC PARTICIPATION

ATTENDANCE LIST

Venue Five star Hotel		Date 30/09/2025		
#	Name	Village	Tel	Sign
43	Deen Mohamed Shuray	Galkayo - municipality	0615773800	
44	Farah Abdulkadir Isah	Galkayo/Alga	0616897030	
45	Abdikarim Abdirisak	Horseed	0615180201	
46	Fadumo Aseel Isah	Horseed - women	0617577815	FADUMO
47	Xalid Ibrahim Farah	Hawlway - women	0612180444	AMMO
48	Habib Mohamed Ali	Peace C.P.O	0618720693	
49	Ukash Dirle Jama C	women	0617577962	UBAX
50	Caral Durin S. Ali	Galleys - C.B.D	0618656912	Zora
51	Bashir Cusman Cayab	Galleys	0615796659	
52	Mahamed Hassan Warsame	Galkayo	0615166340	
53	Abdirahman Warsame	Galkayo	0615797280	
54	Bashir Ismail Isah	Galkayo	0615796689	
55	Abdirahman Ismail Isah	Galkayo/Horseed	0613604388	
56	Shari Mohamed Isah	Galkayo/Horseed	0617314240	
57	Abdirahman Ismail Isah	Galkayo/Horseed	0612614414	
58	Farhan Ismail Isah	Galkayo/Horseed	0615602405	
59	Bashir Cusman Isah	Galkayo/Horseed	0613030335	
60	Yusuf Abdullahi Ali	Galkayo/Horseed	0615224408	

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GENDER SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT
MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO,
SOMALIA

FOCUSSED GROUP (FGD) DISCUSSION GUIDE

South Galkayo

1. Entity / Name of Group/ waste handlers from the IDP camp
2. Date and Venue 1st June → Haysan Baraadoweyne Camp
3. Attendance / Representation
Garbage Handlers
4. Topic of Discussion
→ lack of gloves tools & working.
→ waste disposal
5. Key Issues Discussed
→ better working equipment
→ waste bins in the camps
→ training on recycling and waste segregation
6. Way forward and Resolution
→ capacity building in the camps
→ more garbage disposal bins
7. Signature and Confirmation

[Signature]



GENDER SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT
MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO,
SOMALIA

FOCUSED GROUP (FGD) DISCUSSION GUIDE

- South Galkayo
Male Youths
1. Entity / Name of Group/ Male Youths
 2. Date and Venue..... 2nd June - South Galkayo Market
 3. Attendance / Representation
..... young men from the community
 4. Topic of Discussion
..... livelihood challenges
 5. Key Issues Discussed
→ water source management mostly elders do it
→ lack of jobs - unemployment
→ poor life in the society
→ gender sensitive toilets
 6. Way forward and Resolution
→ capacity building and training for the youth
on income generating projects
→ better ways of waste disposal.
 7. Signature and Confirmation
.....



GENDER SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT
MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO,
SOMALIA

FOCUSSED GROUP (FGD) DISCUSSION GUIDE

South Galkayo

1. Entity / Name of Group/ Women entrepreneurs
2. Date and Venue..... 2nd June - South Galkayo Market
3. Attendance / Representation
..... Women business (small scale traders)
4. Topic of Discussion
→ access to microfinance
→ sanitation in the market
5. Key Issues Discussed
→ not enough garbage disposal bins
→ lack of gender sensitive toilet
→ accessing microfinance is a problem
→ expensive sanitary pads
6. Way forward and Resolution
→ support from local government is needed
→ better loan terms from the banks and
microfinance
→ capacity building
7. Signature and Confirmation
.....
.....
.....



GENDER SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT
MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO,
SOMALIA

FOCUSED GROUP (FGD) DISCUSSION GUIDE

South Galkayo

1. Entity / Name of Group/ women Headed Households
2. Date and Venue 1st June → Hayaa Bacardwayne Camp
3. Attendance / Representation
women from Different Households
4. Topic of Discussion
→ Sanitation facilities
5. Key Issues Discussed
→ lack of enough sanitation facilities in the camps
→ lack of enough water points in the camp.
→ insecurity at night
→ No gender specific toilets
→ expensive sanitary pads
6. Way forward and Resolution
→ capacity building and training on menstrual hygiene
→ improved access to water
→ more latrines in the camps
7. Signature and Confirmation
[Signature]



GENDER SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT
MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO,
SOMALIA

KEY INFORMANT INTERVIEW (KII) DISCUSSION GUIDE

South Galkayo

1. Entity / Organization / Department

Social Department

2. Name of officer and Position / Individual Consulted

Rakia Ali

3. Date and Venue 31st May → Galkayo Town

4. Topic of Discussion

Menstrual Hygiene Management,
Women Entrepreneurship

5. Key Issues Discussed

- Ways of improving menstrual Hygiene
- gender Based violence especially in IDP camps
- Gender gaps in the society
- Improving of gender Sensitive sanitation facilities

6. Way forward and Resolution

- Design of gender sensitive washrooms especially in markets
- capacity building for women entrepreneurs

7. Signature and Confirmation



GENDER SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT
MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO,
SOMALIA

KEY INFORMANT INTERVIEW (KII) DISCUSSION GUIDE

South Galkayo

1. Entity / Organization / Department

Ministry of Health

2. Name of officer and Position / Individual Consulted

Hospital Director → Galkayo Hospital

3. Date and Venue

4th June → Galkayo Hospital

4. Topic of Discussion

Challenges in terms of WASH

5. Key Issues Discussed

- sometimes handling medical waste is an issue
- they get support from local NGOs with drugs & supplements
- it's very expensive to handle weekly drainage of septic
- No gender specific toilets

6. Way forward and Resolution

- More sanitation facilities
- Trainings for care officers to handle GBV
- improved services

7. Signature and Confirmation

[Signature]



GENDER SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO, SOMALIA

KEY INFORMANT INTERVIEW (KII) DISCUSSION GUIDE

South Galkayo

1. Entity / Organization / Department

Local NGO → CISP

2. Name of officer and Position / Individual Consulted

Mr. Manur → CISP Manager South Galkayo

3. Date and Venue... 4th June 2025 → CISP Office

4. Topic of Discussion

GBV / SEA / capacity building

5. Key Issues Discussed

- Protection programs for school going girls
- Dialogue with school going boys and girls to teach them about effects of GBV and MRM
- Action plans (message in schools)
- poor sanitation

6. Way forward and Resolution

- more programs to help girls and women
- target training in schools
- capacity building

7. Signature and Confirmation



GENDER SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT
MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO,
SOMALIA

KEY INFORMANT INTERVIEW (KII) DISCUSSION GUIDE

South Galkayo

1. Entity / Organization / Department

Director Planning Department

2. Name of officer and Position / Individual Consulted

Abshir Abdi - Director

3. Date and Venue

29th May 2025

4. Topic of Discussion

gender responsive issues with regards to the project

5. Key Issues Discussed

- lack of gender sensitive sanitation facilities in the market
- improvement of sanitation in the camps (waste disposal)
- accessibility of public toilet
- women entrepreneurship

6. Way forward and Resolution

- gender sensitive toilet
- include in the designs accessibility to the disabled
- solid waste disposal points

7. Signature and Confirmation



**MINUTES OF PUBLIC PARTICIPATION FOR ESIA ON WATER SUPPLY
PROJECT SCOPES (WTP, WATER SUPPLY NETWORK & BOREHOLE
CONSTRUCTION) HELD ON 28TH MAY 2025 AT MAYORS OFFICE AREA IN
SOUTH GALKAYO**

AGENDA ITEM	DISCUSSION POINTS
1. INTRODUCTION	Welcome and Opening Remarks The meeting commenced with the consultant welcoming all stakeholders to the consultation meeting for the proposed Water Supply Project in South Galkayo and giving an opportunity to all members present to introduce themselves. Purpose of Meeting: • To present the proposed water supply project to key stakeholders • To provide detailed information on project scope and implementation • To gather stakeholder input, concerns, and recommendations • To ensure community participation and ownership of the project.
2. PROJECT INFORMATION	Project Background: The consultant outlined the context and need for the water supply project in South Galkayo. The discussion highlighted current water access challenges, including limited availability of safe drinking water, long distances traveled for water collection, high rates of waterborne diseases, and vulnerability of existing water sources to seasonal variations and contamination. Project Objectives: • Increase access to safe and reliable drinking water for residents in South Galkayo. • Reduce waterborne diseases through provision of treated potable water. • Decrease time spent on water collection, particularly for women and children. • Establish sustainable water management systems with community participation • Improve overall public health and socio-economic conditions. The consultant informed the members present of the proposed project components as follows; Component 1: Borehole Drilling • 5No. new boreholes and rehabilitation of 7No. existing ones. Component 2: Water Treatment Plant (WTP) • There will be 2No. WTP; at Gahrey Primary and at Haar

AGENDA ITEM	DISCUSSION POINTS
	Haar IDP camp with a quality monitoring laboratory. • A total estimated production of 4000m³ per day from both WTPs. Component 3: Water Supply Network • There will be an inclusion of 25km water supply pipeline covering several areas in South Galkayo. Expected Benefits: • Reduced cases of water borne diseases outbreak. • Improved household water access. • Water quality meeting WHO drinking water standards • Reduction in water collection time. • Creation of several employment opportunities during construction.
3. QUESTION AND ANSWER SESSION	Q1: What measures will be put in place to ensure the sustainability of the water supply system after project completion? A1: A comprehensive sustainability plan will be implemented including establishment and training of a Water Management Committee with representation from community members, local government, and water user groups and Development of operation and maintenance manual and training of local technicians. Q2: How will the project ensure that women and vulnerable groups have equal access to water services? A2: The project incorporates gender and social inclusion principles whereby water points will be located considering safety and accessibility for women and persons with disabilities. Q3: What water quality standards will the treatment plant achieve, and how will quality be monitored? A3: The Water Treatment Plant is designed to produce water meeting WHO drinking water quality guidelines and Somalia national standards. Q4: What will be the water tariff, and how will it be determined? A4: The tariff structure is being developed through a participatory process involving assessment of actual operation and maintenance costs and will be guided by local WSP. Q5: Will there be employment and training opportunities for young people from the community? A5: Yes, the project is committed to local employment prioritizing hiring of local labor for construction activities including excavation, pipe laying, and civil works. General Discussion: Stakeholders expressed overall support for the project, emphasizing the critical need for improved water access in South Galkayo.

AGENDA ITEM	DISCUSSION POINTS
	Several participants shared experiences of current water challenges including health issues from contaminated sources, economic burden of water purchase, and impact on children's education due to time spent fetching water. Stakeholders requested regular updates on project progress and continued involvement in decision-making processes.
4. CLOSING REMARKS	Summary of Key Discussion Points: The consultant summarized the main outcomes of the meeting which included Strong stakeholder support for the water supply project confirmed, clear understanding of project scope, and components established. Vote of Thanks: The consultant expressed gratitude to all participants for their attendance, active participation, and valuable contributions. Special appreciation was extended to community members who traveled to attend the meeting. The commitment demonstrated by stakeholders reinforces the project's foundation for success and sustainability. Closing: The meeting was officially closed at with a closing prayer. Informal discussions continued among participants.

Attendance List

PREPARATION OF GENDER-SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO, SOMALIA

TOWN: SOUTH GALKAYO ORGANIZATION: NAT-ORIS MEETING VENUE: NAT-ORIS OFFICE, SOUTH GALKAYO DATE: 22/05/2025

ATTENDANCE LIST

NO.	NAME	ORGANIZATION	PHONE NO.	EMAIL ADDRESS	SIGNATURE
1.	<u>Ahmed Hassan Farah</u>	<u>Mozur</u>	<u>0618810260</u>	<u>mudugor@wbt.gm.so</u>	<u>Ahmed Hassan Farah</u>
2.	<u>Abdourahman she Hassan</u>	<u>Municipality</u>	<u>0615888981</u>	<u>galkayo.mayor@gmail.com</u>	<u>Abdourahman she Hassan</u>
3.	<u>Dr. Bakel Ugaad Mohamed</u>	<u>Overseas</u>	<u>613150505</u>	<u>Drakal@medig.gm.so</u>	<u>Dr. Bakel Ugaad Mohamed</u>
4.	<u>Mahamed Abdirahman Abdi</u>	<u>Director Planning</u>	<u>615757577</u>	<u>Abdibakur@gmail.com</u>	<u>Mahamed Abdirahman Abdi</u>
5.	<u>Kaka Kennedy</u>	<u>Director of Planning</u>	<u>4247721197249</u>	<u>kaka.kennedy@ethiopia.gov.et</u>	<u>Kaka Kennedy</u>
6.	<u>Fredrick Kangaga</u>	<u>Tertiary of Vital</u>	<u>7254708198820</u>	<u>Kangaga.tertiary.co.ke</u>	<u>Fredrick Kangaga</u>
7.	<u>Ambrasse MUKHETI</u>	<u>TCE-VITAL JV</u>	<u>7254705524778</u>	<u>ambrasse.mukheti@tertiary.co.ke</u>	<u>Ambrasse MUKHETI</u>
8.	<u>Collins O. Juma</u>	<u>TCE-VITAL JV</u>	<u>7254711806553</u>	<u>collins.juma@gmail.com</u>	<u>Collins O. Juma</u>
9.	<u>Nelson Baraka</u>	<u>TCE-VITAL</u>	<u>7254722874099</u>	<u>nelson-baraka@gmail.com</u>	<u>Nelson Baraka</u>
10.	<u>Sifomom Owayo</u>	<u>TCE-VITAL</u>	<u>7254722874099</u>	<u>sifomom.owayo@gmail.com</u>	<u>Sifomom Owayo</u>
11.	<u>ABDIRAHMAN MOHAMMED</u>	<u>VITEL</u>	<u>725470778490</u>	<u>mt1x6ayid@gmail.com</u>	<u>ABDIRAHMAN MOHAMMED</u>
12.	<u>Abdisalan Ibrahim</u>	<u>Vitel - Care</u>	<u>0615723457</u>	<u>abdisalan.ibrahim@vitel.com</u>	<u>Abdisalan Ibrahim</u>
13.					

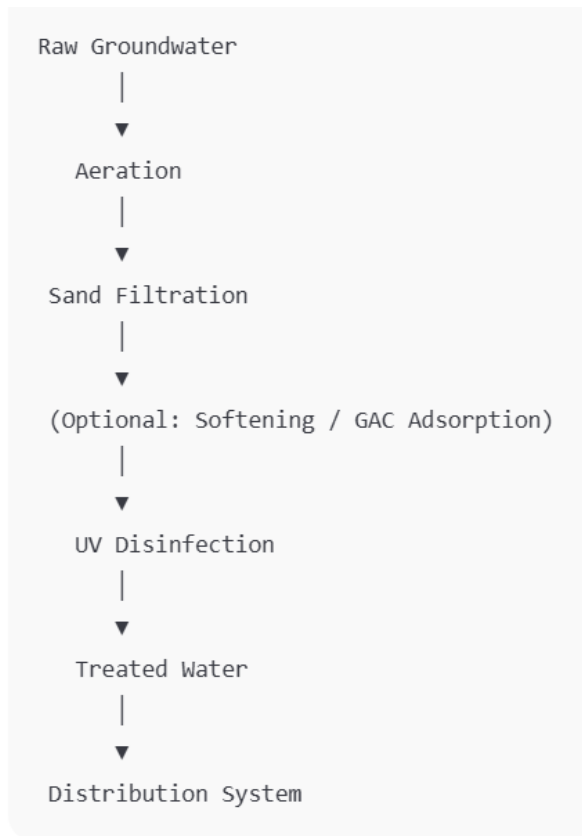
Appendix 2: Photographs Of Situations in Various Parts of South Galkayo

	
Pictorial views of South Galkayo Town	Hayaan Bacadweyn IDP community Centre
	
A household in the IDP camp	Sanitation facilities in the one of the camps

XXXX

APPENDIX 3: PROJECT TECHNICAL DESIGNS AND LAYOUT

Simplified Treatment Train (Illustration)



Water Treatment Options

- Treatment Options:
 - Granular Activated Carbon (GAC) filters. Use a minimum of two (2) filters in series
 - Aeration
 - Combination of GAC and Aeration

